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DEC systems houses slow to speak out in software piracy case

by John Kavanagh

DIGITAL Equipment systems houses are reluctant to get involved in a software piracy case between the giant minicomputer manufacturer and the London firm Darkcrest, even though they side with the UK company. It is claimed DEC's case could be on *shaky ground because of its re*actions to its victories in the early rounds of the case.

That is the view of Darkcrest managing director Nick Brackenbury, who is trying to get statements from systems houses on the third-party business, statements which he says would contradict DEC's evidence.

"We need people to say some very ordinary things about the market because we believe that DEC's statements do not reflect the way the company operates," Brackenbury said. "Everyone we've talked to supports us verbally but they're reluctant about putting it in writing."

Brackenbury said DEC had been surprisingly slow to take up the High Court order it won at the end of July to search Darkcrest's premises for "evidence of misappropriation" of software.

"Normally companies carry out the order in a day," he said. "But DEC waited a week, even though they had spent a lot of money going to court."

In addition, four months after winning the order, DEC had still failed to provide the documents supporting that case.

"This is fundamental in English law and our solicitors are getting *impatient*," said Brackenbury. "It appears DEC is dropping the case. We are pursuing our counter-suit relentlessly."

Darkcrest suggested DEC was taking the action because it was trying to increase end user sales by making life difficult for its systems houses and OEMs, traditionally its big outlets.

DEC denied this charge. "People were saying this five years ago," said a spokesman. "But the evidence speaks for itself: we have 10 authorised computer distributors, tens of official OEMs and five authorised terminal distributors."

The spokesman added that DEC was determined to pursue the case – there would be no dropping out.

DEC would not comment on Darkcrest's other claims. Peter Bembridge, head of the legal department, said the company would conduct litigation in the courts, not the Press.

EDP strikers settle into their daily routine on the picket line.

Clive Jenkins to join EDP picket

by John Riley

UNION boss Clive Jenkins is to throw his own weight into the picket line in the UK's longest running union dispute at a software house.

Jenkins is this Friday due to join the 18 strikers at Electronic Data Processing in Sheffield, who first formed their picket line on May 21. The strikers are seeking their own reinstatement and recognition for their union, ASTMS.

EDP managing director Richard Jowitt has made three unsuccessful attempts to settle the strikers over the last two weeks. Offers of about £7,500 and £8,500 were rejected and he made another offer of around £9,500, conditional on the Union recommending it to them. Jowitt denies the precise sums.

Originally 25 staff, representing about half of the company, went on strike. Four went back and three found work elsewhere. The remaining 18, who include a programmer, two operators, 10 data preparation staff and others, are seeking reinstatement and recognition of their union (ASTMS) by the company.

This dispute, the longest running in a software house, raises several questions of wide relevance, particularly at a time when ASTMS is keen to recruit new members from this sector. There are two main issues, as well as ancillary ones.

The first hearing, on December 1, will be to see whether Jenny Wright, a technical author, has a case for unfair dismissal because she helped organise a union. The union considers her case to be strong, for although she was told that she was being made redundant, she had two weeks before received a schedule detailing her work up to Christmas.

However, the case is not so clear cut for the 25 who orginally went on strike in sympathy.

DG push for 32-bit share

by Robert Parry

DATA General, recently left behind at the lower end of the 32-bit mini market by rival DEC, is trying hard to regain a foothold.

A new entry level Eclipse machine, the MV/4000, gives twice the performance of a DEC VAX-11/730 – its nearest equivalent – but for half the price, claims Data General.

With the machine, the company is pushing for market share in two key sectors: integrated office automation and industrial automation. For the office market it will appear as an eight-terminal packaged system running the Comprehensive Electronic Office software, while for the industrial automation market it will be offered as a cheaper version for OEMs to build into systems.

But the new bottom-end machine is not Data General's only weapon in its renewed assault on the 32-bit mini market. In January next year it is due to bring in a much more powerful machine at the top of the Eclipse line, the MV/10000, which with its mainframe power will outperform – and outprice – the DEC VAX.

Meanwhile Data General is gingered up the existing Eclipse range with various new peripherals, including a cheap letter quality printer and a 50-Mbyte disc drive, as well as an intelligent synchronous communications controller, and with a revision of the real time AOS/RT32 operating system.

■ British mini maker GEC Computers has brought out a bid to speed it into new business areas. This week it unveiled a 32-bit desktop version of its 4000 Series, the 4150, to take GEC into the world of systems houses and OEMs.

Micro Xeno vanishes into a web of intrigue

by Kevin Cahill

A SCRIPT straight from John Le Carré, complete with a night club in Germany, a pass to GCHQ in Cheltenham, and even Israeli intelligence is the cover for what looks like one of the industry's naughtier little rip-offs.

Micro Xeno Ltd, the company set up by Bart Khan to exploit the so-called "charge packet memory" which claimed to hold 10 gigabytes of memory in a 6 x 6 inch cube, has crashed with official debts of about £300,000, further unofficial debts of £200,000 and assets of £2,000.

A meeting set up by liquidators Laurence Gerrard last week, at the request of a firm of Birmingham solicitors, was attended by four people.

A spokesman for the liquidators said they found that everything in the company was owned by someone else.

The local sheriff's men had already been in and repossessed valuable equipment that had either been lent or leased to Khan and his company.

According to Brian Powell, a former director of Khan's second company, Micro Xeno Computing and Reprographic Services Ltd, the missing Khan may now be in Germany. "He came back from Germany with money on one occasion, and mentioned something about a night club in which he had shares."

Powell, who invested £5,000 in Micro Xeno, resigned last December and went to the police because he believed that Khan was not complying with company law.

KHAN . . . disappeared.

LINE NOISE

THE future looks bleak for Rickmansworth-based micro distributor AI Microcomputers. The VAT men have impounded its stock, bills have been left unpaid, and heads are rolling at the top. Following a shareholders meeting last week, described by ex-director Louis Kamber as "not a happy meeting", MD Brian Watts is on the way out.

Watts was tight-lipped about the company's position: "I can't tell you anything in the remaining time I'm here," he said, "but there is a legal action pending with a third party."

IT'S nail biting time at ICL's *Atlas division as the London Online Local Authorities bureau decides whether it is going to go IBM or ICL for its new mainframe. The authority has currently got a final decision to reach on whether to buy a 3081 or one of ICL's Fujitsu built Atlas machines.*

There are no leaks as to which way the authority is going to go, but ICL must be hoping that its recent deal with the Severn Trust water authority will influence Lola and enable it to meet its quota of two Atlases sold before the year end.

Micro bonfire threat

by John Kavanagh

FORMER Byte Shop managing director Bill Cannings is back at the centre of controversy – this time over the alleged failings of a system from one of his new microcomputer shops.

Cannings hit the news with one of the first chains of UK high street computer shops. But the company went into receivership in 1979 and was bought by Comart, another retailer, in 1980.

The dispute is with Power Packing Services, a packing and freight forwarding firm, which bought an Intertec Superbrain and ledger packages from Cannings' company a year ago.

"Not a week has passed without a problem which has caused us to stop our accounting work," said Power Packing director John Jacobs.

Cannings has rejected Jacobs' claims, saying his company has helped Power Packing with its installation but that the customer has ignored suggestions that it should take out a £300-a-year maintenance contract.

"We will gladly sign a maintenance agreement – but they must get the system working in the first place," said Jacobs.

Jacobs added, "If all else fails I will invite the Press to see the computer and software being put on a bonfire and its ashes placed in a box and sent to Intertec."

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'We have taken some medicine that we hope will cure the problem' – marketing director

Severe slide at Sperry UK

PASCOE . . . "More medicine may be needed".

by Kevin Cahill

LOW morale and a catastrophic drop in business are facing Sperry Univac in the UK, with the threat of further redundancies hanging over the company's staff.

Order bookings for the first half of fiscal 1983, ended September 30, are £11 million, according to internal Sperry documents, well short of a budgeted order book of £56 million for the full year. That figure has already been reduced from £75 million, say sources inside the company.

Sperry's UK marketing director John Pascoe said he was unable to comment on the figures, since the company does not make any public statements on its position until its annual review in April.

But he did say that Sperry was suffering with everyone else in the industry. "We have taken some medicine that we hope will cure the problem, but more medicine may be needed," he said.

The order book trend at Sperry, the UK's 10th largest computer company, follows poor results recorded at the end of fiscal 1982. At that time orders were £49 million against planned bookings of £85 million. Revenues for the year were not so bad, showing a total in 1982 of £70.4 million against a budgeted £84.2 million. But the company lost £1.85 million before tax against an expected profit of £9.8 million.

The collapse in the order book threatens further redundancies, and a repeat of what one ex-employee has called the "night of the long knives" when a disputed number were made redundant in August. That figure has ranged between 60 and 200, with Sperry officially sticking to the former.

Government operations is the worst hit of Sperry's sales divisions, with sales budgeted at £20 million to the end of the year and so far showing only £465,000.

At the end of March Sperry had 1382 staff in the UK, 96 less than the budgeted payroll of 1478.

No Telecom job losses – Jenkin

by Donald Kennett

INDUSTRY Secretary Patrick Jenkin has dismissed claims that there will be job losses in telecommunications if the government's Bill to sell off British Telecom is passed.

The claims are not based on any objective analysis, he said last week, while announcing the Telecommunications Bill. The Bill will give the government powers to sell BT to private investors and set up an Office of Telecommunications to regulate the industry.

Jenkin said BT's employees would benefit from a huge expansion in telephone networks and in the numbers employed on them, similar to that seen in the US, as a result of the Bill.

BT chairman Sir George Jefferson, however, has recently spoken of staff cutbacks that might be made necessary by the newly-created competitive environment, and Post Office Engineering Union general secretary Bryan Stanley says the Bill is completely unnecessary and will be to the detriment of a large number of customers and staff.

The Labour Party and the telecommunications unions are committed to opposing the Bill.

Jenkin also predicted huge growth in the telecommunications supply industry, where he said firms would be able to compete fairly to provide telephone services and apparatus.

"Above all," he said, "the new proposals will have advantages for consumers." Competition was expected to widen choice, improve quality and lower some prices.

"Today's consumers will no longer have to pay high telephone bills to provide the extra revenue for tomorrow's investment," he said.

The Bill is intended to put BT on an equal footing with other companies. It removes BT's exclusive privilege to run telecommunications systems and its power to licence other service providers.

BT itself will require an operating licence for which it will pay a fee and the Office of Telecommunications (Oftel) will check that BT complies with its terms. Those terms are still under consideration by the government, but they will include a provision for limiting the return on capital that BT makes in areas where it faces little competition.

Oftel will also take over the Post Office Users' National Council's job of investigating consumer complaints, and it will be empowered to change the terms of a company's licence and to take licensees to court.

Traders who fail to mark relevant equipment "approved" or "not approved" for connection to public telecommunications networks, or to state in advertisements whether it is approved, will be liable to prosecution by the Director General of Telecommunications.

■ Also last week, Jenkin announced that BT's target rate of return on assets was raised from 5.5 per cent for last year to 6.5 per cent for next year. Coupled with continued constraint on tariff increases and an external financing limit which was reduced to £96 million, the new target should keep BT under pressure to increase efficiency, he said.

JENKIN . . . "BT employees will benefit".

ICL nets £3m worth of orders

by Kevin Cahill

ICL last week pulled in its first major network success, with £3 million worth of orders from City institutions and government.

Dr Aodh O'Dochartaigh, director of ICL's DNX Division which is responsible for the sale of the Mitel DNX 2000 voice and data private exchange, last Friday announced the order book, and a five-year target of £80 million in turnover for the division.

In a marketplace growing at 50% plus a year, at least one stockbroker, Neil Barton of Cook Lumsden, thought O'Dochartaigh conservative.

"We are on the threshold of the network revolution. Demand for products like the DNX 2000 far outstrips supply, and ICL has only mentioned its UK target."

The company has pinned not only its hopes, but virtually its entire network philosophy around the DNX 2000.

The exchange, currently built by Mitel in Canada but scheduled for production in Wales next year, is fully digitised and can carry voice or data communications through its switches with equal ease.

Up to 10,000 lines can be routed through the fully facilitised version of the device.

In the current ICL network philosophy the DNX 2000 is the main interface for all external voice and data links between an organisation and its core 10 megabit per second open systems local area network.

■ See page 4 for a full report on ICL's Roadshow and its ambitious year – end announcements.

New man at Altergo puts in US money

AMERICAN stockbroker and businessman Leonard Levy has become a director of the British software house Altergo and has "made a substantial investment" in the company.

The shake-up has led to the departure of former director Dick Jones.

Protest to PM

UK MICRO-MAKERS are due to protest to the Prime Minister today about the government's purchasing policies. The British Microcomputer Manufacturers' Group has sent a letter to Mrs Thatcher complaining that in a new short-list of approved micro suppliers only 20% were UK companies.

IBM image

IBM has launched an image terminal for under £10,000 that can scan, transmit and receive black and white images. It allows a host computer to send documents to any number of other image terminals, called Scanmasters, on a local, national, or international network.

FLEET . . . New president.

'Spend more' plea

UK COMPUTER and business equipment industries must spend more on education and training and achieve a higher level of investment in research and development, Rex Fleet, chairman of NCR and the incoming president of the Business Equipment Trade Association, said last week.

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If you like our terminals you'll love our micros
TeleVideo, manufacturer of one of the most successful ranges of computer terminals, now has an 8-bit microcomputer.
All TS800 models are built around the Z80A chip and use the popular CP/M operating system.
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BEVAN . . . "Anyone will be able to get in on IBM user base".

'Appalling record' on enforcing standards

by Kevin Cahill

THE track record of existing suppliers in implementing standards is appalling, according to Mike Bevan, managing director of network supplier Xionics.

Bevan, speaking at the London branch of the British Computer Society, said he knew of no existing data processing standard for which there was not a subset, a superset and several dialects.

For these and other reasons Bevan said that open systems architectures would not exist as a usable entity for five to seven years.

"Nobody expects the complete 'book' of open systems standards to be available for three more years, with a further three years to implementation," according to Bevan. Those views will be seen as distinctly dampening in a sector of the DP industry where, by Bevan's own admission, hyperbole far exceeds performance.

While generally seeing big suppliers as the major roadblock to common standards, Bevan queried IBM's interest in seeing truly open systems arrive.

"When open systems are really here, you will open up IBM even more; anyone will be able to get in on the IBM user base."

Easing the move to office automation

by Donald Kennett

NORTHERN Telecom has announced a series of moves designed to make it as easy as possible for both users and manufacturers to plan office automation systems around its SL-1 digital telephone and data exchanges.

The company is now selling the specification of the digital transmission path through its exchange so that terminals and computers can be connected without modems, carry the minimum overhead in call set-up procedures and communicate at the highest data rate used internally in the exchange.

It has also announced specific agreements with Digital Equipment and Sperry Univac to collaborate on the design of future equipment interfaces. And it has announced a five-year $1 billion development programme in open protocols for a growing range of communications including voice, data, image and eventually moving video — all of which will be designed to handle a wide range of types and makes of equipment.

Within three years existing wiring from telephone handsets will be able to carry data at 1 Mbit per second for simultaneous voice and data conferencing and for voice, text and image multi-media messaging services based on Northern Telecom devices.

Northern claims that the Displayphone it launched last year was the first combined voice and data terminal on the market. It also claims its SL-1 PABX is the most successful in the world, with a total of two million lines installed in 40 countries.

And that its DMS-100 range of digital public exchanges, which will be included in its open protocol development programme, is the most successful in North America.

The company also plans to develop gateways to proprietary local area networks, X25 public packet switching networks and private networks based on IBM's SNA.

The open approach taken by Northern Telecom parallels an increasing demand from users for standard interfaces.

£120m ultimatum for Olivetti

by Jack Gee

FRANCE'S Minister for Industry and Research has told Carlo de Benedetti, vice-chairman and managing director of Olivetti, to buy back the 33% stake in his company held by State-owned Saint Gobain or sell out the rest of the equity to the French conglomerate, industrial sources said in Paris.

Olivetti would have to raise £120 million to repurchase Saint Gobain's holding. The surrender of the Italian company to French control is ruled out, the sources added.

De Benedetti is now looking into the possibility of Saint Gobain's stake being transferred by the French government to another nationalised concern. The telephone exchange manufacturer CIT-Alcatel is widely mentioned in this context.

France's Socialist government has already compelled Saint Gobain to sell its 20% stake in Honeywell Bull, which is now 80% State-controlled, in the framework of a policy to exclude the glass conglomerate from the electronics industry.

Olivetti is becoming increasingly impatient with the slowness of the French government in working out its overall electronics strategy on which the Italian firm's future in France now depends.

De Benedetti has told Jean-Pierre Chevènement, the French Minister for Industry, that Olivetti will not tolerate any interference by the French government and has the right under Saint Gobain's purchase deal of 1980 to re-purchase its shares if these were up for transfer.

The Olivetti chief said recently that he had reached an agreement with the French government on the principle of co-operation in the development of office communication systems. But details still had to be worked out, de Benedetti added.

De BENEDETTI . . . Will not tolerate State interference.

The French government is eager to obtain access to the Italian market for French time division electronic telephone exchanges in return for an Olivetti role in office communications.

De Benedetti said: "CIT-Alcatel is certainly the best in Europe in telephone switching systems. But I'm afraid an arrangement on these lines between France and Italy is unlikely."

Thomson-Grundig merger aims for powerful European grouping

by Jack Gee

THOMSON-BRANDT and Grundig last Friday put the finishing touches to an agreement which could reshape the entire European electronics and computer industry by creating a major new grouping.

The French State-owned firm took a 74.5% stake in Grundig, whose remaining 24.5% of equity is held by Philips. Agreement by Philips, which has prior call on Grundig shares now available, was regarded as certain.

The immediate objective of the Thomson-Grundig merger is to establish a powerful front in Europe against the assault by Japanese electronic consumer goods, particularly video cassette recorders.

France recently introduced customs curbs on imports of video recorders, and these have caused custom warehouses to fill up not only with Japanese products but with those from Philips and Grundig factories which account for 10% of French sales.

But the three companies involved clearly look forward to closer co-operation in other fields of research, development and marketing in which computer components will be a key part.

The West German anti-cartel organisation is expected to give its blessing to the Thomson-Grundig alliance because it is worried about the fate of the national electronics industry following the collapse of AEG-Telefunken.

Thomson's move into Germany coincides with its success in France, in extending its hold on the components industry.

It has obtained State approval to take over Eurotechnique, a manufacturer in which National Semiconductor holds a 49% stake. French conglomerate Saint Gobain exercises 51% control.

The government has favoured Thomson in the framework of a national plan to rationalise manufacture of components. This role is at present shared by Eurotechnique, EPCIS — in which Thomson and the French atomic energy authority are partners with Motorola — and Matra-Harris.

French Minister for Industry and Research Jean-Pierre Chevenement seems to have been impressed by arguments from Thomson's administrator general Alain Gomez that CII-Honeywell Bull, which is also under State control, is being given a privileged position in computer production.

But in rewarding Thomson with control of Eurotechnique, the French government is lumbering taxpayers with a bill of between FFr100 and FFr200 million (£8 to £16 million) for paying out to National Semiconductor for the licences — hitherto freely available to Eurotechnique — and royalties on production.

'Expert systems always wrong'

by Philip Hunter

COMPANIES that have developed general purpose expert systems are living in a fantasy world. The best use of present technology is in tailoring a system for a particular application like medical diagnosis or oil exploration.

This view came last week from a budding authority on expert systems, Max Bramer of the Open University, speaking at the Pergamon Infotech State of the Art conference in London.

"There can be no doubt about it," he said. "Expert systems made from the general purpose builders just will not work".

The reason for the failure of general purpose expert systems, says Bramer, is that expert knowledge is difficult to condense into a set of rules capable of computer analysis. Experts themselves often do not understand how their minds work, and so much of their knowledge is unconscious. Therefore only a carefully tailored approach will work.

The biggest handicap facing expert systems builders claims Bramer, is that experts are always wrong. "It follows that all expert systems are wrong too," he says.

Because experts make mistakes in their fields, expert systems can sometimes perform better says Bramer. This can happen by gradually refining an expert system after running it on test cases.

One of the most exciting possibilities for expert systems, says Bramer, is to have them make up their own rules as they go along. They would be given a small cluster of rules to start from, and add as they learn from experience.

Viewdata 'give away'

NOTTINGHAM Building Society has revealed itself as the mystery "high-street financial organisation" behind the scheme to give away 100,000 viewdata terminals to set up the UK's first electronic home banking service.

The scheme includes a comprehensive package of financial services and a new database Prestel through which subscribers will be able to order and pay for goods and services from a variety of collaborating companies.

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Some robot firms will go to the wall, says report

by Philip Hunter

THE US now has too many robot makers and some will go to the wall, according to a financial report. The number of US robot producers grew from 18 in 1981 to 19 in 1982, and average revenue of each fell from $8.7 million to $6.6 million.

A report from the US Venture Development Corporation expects a clutch of mergers and bankruptcies among these companies to leave 21 survivors by the end of 1983. Persistence will be rewarded, however, because by 1987, the 30 or so US companies making robots will share a market of $1,000 million, five times bigger than in 1983.

The VDC report is particularly concerned about the revenues of the smaller robot producers. Ignoring the largest two manufacturers, average revenues in 1981 were $2.9 million, and less in 1982.

This may seem plenty to keep the receiver at bay, but the start-up investment is enormous, says the report.

Philips launches multi-user micro

THE cornerstone of Philips office automation strategy has been laid with its launch last week in a Madrid of a multi-station microcomputer. At the same time Philips has marked its intention of following the latest trend of the industry by selling its products in the volume market through indirect distribution channels.

A local area network strategy will be announced in January, with an integrated office automation system to be demonstrated at the Hanover Fair in April. The LAN will be based on token passing standards formulated by the Institute of Electrical and Electronic Engineers, and being closely looked at by IBM.

The new micro, the P3500, will have a "16-bit architecture", but in its initial form will be an eight-bit system operating under Turbodos, a PM 2.2 compatible operating system from Microsoft.

Tony Nevison, divisional director of Philips Business Systems, said that an eight-bit version has been released first to tap the wealth of available eight-bit software.

But Philips' decision to develop a multi-user micro was made only last January, and it is clear that the eight-bit offering has been rushed onto the market to ensure Philips' credibility with its customers.

Software for the micro will come from third party software houses, with Peachtree, subsidiary of US giant Management Science America and a supplier to the IBM Personal Computer, likely to be the first to be signed up. Sheffield Micro is another potential partner.

Deliveries to end users will begin in March of next year, and a 16-bit version will be released in August. The emphasis is on industry standard technology, said Nevison, with compatibility with IBM systems a high priority, and ICL compatibility likely to come soon.

The initial release offers up to four shared-resource workstations, each with a dedicated Z80 processor. It uses the Intel Multibus, and languages include CIS Cobol, RM/Cobol, Multi Basic, and Basic 80. Graphics will come in the autumn of next year.

The P3500 has a starting price of about £3,000. A two workstation, 5 Mbyte hard disc and 300 characters per second printer will cost about £8,500. Micro packages such as WordStar, MailMerge and CalcStar will be available.

About 40 distributors will be appointed by the end of 1983, with 80 distributors by 1985 expected for full UK coverage. The general manager responsible for the distribution chain, Sixto Rodriguez, said that 50% of the data processing division's revenue would come through indirect channels by 1985.

Nevison said Philips is spending £2 million a day on "technological pioneering type work", with 4,000 research workers. The company's UK data processing division turned over about £50 million in 1982, he said.

NEVISON . . . Emphasis on industry standard technology.

Strike-hit Sinclair looks for suppliers

by Robert Parry

SINCLAIR Research was last week hit by a new production problem — a strike at the Timex factory in Dundee, which cost Sinclair a full week's production, about 20,000 Spectrum and ZX81 units. Timex is the main manufacturer of Sinclair's computers. The interruption in supply has set Sinclair looking for other possible manufacturers.

The strike came about when management suspended five workers, and 3,500 walked out in support. Meetings last Thursday resulted in an agreement to go back to work. Some maintenance staff went back on the Friday, and there was a full return to work on Monday this week.

Timex has been the primary subcontractor for building the Spectrum since it was launched in April, but has had a troubled supply history. Technical problems built up a backlog of orders, which was increased by Timex's annual three-week holiday just as production was starting to pick up. In October Thorn EMI was taken on as a second subcontractor, in an effort to cut the backlog and build up stocks for an export push next year.

Sinclair can ill afford further supply problems for the popular Spectrum as customer demand increases steadily in the run up to Christmas. The order backlog for the machine — which is only available through mail order — has been cut from the 12 week delay it reached in September, and the prospect of the waiting list stretching out again started a search for possible alternative manufacturers.

Two of the six promoted by computer.

Leg up for secretaries

by George Black

A POOL of secretaries working for a Home Counties estate agency has won promotion, since a computer took over their old jobs.

The girls, who used to be snowed under a mountain of paper, have been freed to show clients around houses and negotiate contracts, said the firm's boss, Simon Poole, of Curson and Poole.

The agency is one of the first in the country to use information technology in this way. The number of secretaries has been reduced from nine to three and the girls no longer needed for typing and reception duties were given the opportunity of more responsible functions.

Curson and Poole has nine offices in Hertfordshire and North London and is shortly to open a tenth. Four of the branches were linked by a Philips P7000 multi-function processing system in April and the remainder in August.

"It's still very early days, but this method gives much greater management control," said Poole.

Customers could now go into one branch, inquiring about what houses were available in a different area and be given a list on the spot.

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MICROGRAPHICS

Boom in DPMs' jobs this year . . .

by John Riley

THERE has been a boom in DP management recruitment this year, according to figures issued by Management Selection Ltd in its quarterly MSL Index*.

This index is a lead indicator for other economic indices and is made up of a count of all advertisements in the national newspapers and the *Economist* for managerial, senior technical and professional staff.

The computing vacancies are from industry, commerce and government sponsored agencies and exclude academic and civil service vacancies. The base salary is in practice £8,000 p.a.

The total number of job advertisements for the third quarter of 1982 was 6,822, an increase of 55% over the same period last year. Of these 510 were computer jobs, which is an increase of 78% over the same period.

Within the computing sector, there was a steady rise to 1977, followed by a high plateau of about 450 jobs per quarter. This lasted until 1980 when the number of adverts plunged to as low as 268 in the third quarter.

It is only in 1982 that there has been a significant increase, topping 500 in the second quarter. The latest figure of 510 suggests that this revival is continuing.

Oastler Michie, director of MSL, commented: "We don't monitor the specialist press. We have done so in the past but every time we have found that the trend is mirrored in the nationals.

"It is also interesting that this year the volume of advertising for computer equipment sales people seems to be very high, and it is very noticeable that their salaries are going up fast."

These computer sales figures are integrated into the sales category and a more detailed breakdown of the figures is not possible.

*MSL Index. Management Selection Ltd, 52 Grosvenor Gardens, London SW1. Tel: 01-730 0255.

. . . but computers will add to unemployment, warns US futurist

by George Black

MORE jobs will be destroyed than created by computerisation from now on, American futurist Earl Joseph warned a London seminar.

"The real question is whether our institutions will change fast enough to create enough new jobs and my suspicion is that we won't," he said. "Unemployment will grow as we try to cling to our past."

He was addressing the State of the Art Review put on by Pergamon Infotech. Earl Joseph, who worked for Univac for 30 years and is now president of Anticipatory Science Inc in Minnesota, said we were still in the Stone Age of Computers.

The next decade would see very high-speed integrated circuits, ultra-large-scale integration, and machines that could recognise some strings of spoken words, he said.

Increasing reliability of products was another factor which was bound to add to unemployment.

The 1990s would bring rapid advance into expert systems. Already a medical diagnostic system called Internist was getting as good results as human doctors under test conditions.

The ingredients were being assembled for a co-operative network of machines. "We'll have machines so smart they start to nag at you," he foresaw.

The smart car, taking its own driving decisions and avoiding accidents, could be on the roads by 1995.

Orwell had led us astray in his 1984, because it would be "millions of Big Brothers" who would be watching us. "We have to be very careful, therefore, how we set about building our new networks."

The 1990s would also lead to a blending of electronic and biological research, with the invention of a bio-chip.

Parliament and the general public are ignorant of government decisions.

Government in dark on technology says report

by John Riley

THE government, Parliament and the public are not getting enough information on technology to make sound policy or have informed opinions on that policy.

This is the view of an independent think-tank of top academics in a report Technology and Government,* published by the Council for Science and Society last week.

Although there is a rapid proliferation of new technology, the processes for controlling it are inadequate, with more attention on short-term at the expense of long-term effects.

The debate is dominated by proponents of innovation, and the general public and Parliament are ignorant of the decisions being taken by government which will affect everybody seriously; and this at a time when genuine options are available.

The report recommends a Select Committee for Science and Technology drawn from both the Lords and the Commons, that "will transcend departmental boundaries and examine in a more synoptic and coherent way the wider implications of departmental policies."

Other recommendations are that scientists should make a direct contribution to policy at all levels of government, that there should be more open government to allow more discussion, that Parliament should have more staff to cope with the information, and that the public and scientists should involve themselves more in debate.

When asked how effective he expected these recommendations to be in practice, Professor Kenneth Denbigh, director of the Council for Science and Society, commented, "It is a question of gradually putting across new ideas to the public. We don't expect immediate results, but we are putting a point of view which gradually gets assimilation into party policy."

A previous report, New Technology: Society, Employment and Skill – a Study of the Effects of the New Technology on Work has, according to Denbigh, "been a great success. It has been adopted in teaching courses in the US and in Britain. We hope that Technology and Government will be equally influential, although it is more concerned with the British situation.

*Technology and Government. £2.50 plus 40p postage, Council for Science and Society, 2/4, St. Andrew's Hill, London, EC4V 5BY.

'Beating off foreigners'

BRITISH micros are beating off the foreign hordes, says a new report, and British office systems are holding their own against the imported opposition. UK micro manufacturers were found to offer some of the most advanced products and to give the best value for money, with eight out of 10 new British micros gaining a "worthy of attention" accolade.

The report is "What to Buy", published from King's Road, London, SW3.

The imported hardware fared less well, with only five out of 24 new products being deemed "worth a look". In the office automation stakes, Office Technology, a small UK company comprising ex-IBM personnel, was given joint first place with US giant Wang, reducing Burroughs, IBM, and Philips to the role of also-rans.

One of the reasons cited for the success of the UK companies is the increased standardisation in the use of chips, most UK firms plumping for Zilog or Intel products, and operating systems – CP/M, its 16-bit derivative CP/M-86, and MS-DOS.

The insignificant licensing fee for one of these operating systems, coupled with the paltry cost per chip, means that 75% of a manufacturer's needs are cheaply satisfied, says the report.

UK micros 'best value'.

Wilmot launches ICL Roadshow

WILMOTT . . . "Biggest computer promotional event ever in UK."

REMINDING the world that it still sells mainframes, ICL has launched the 2957, a new entry level system for the 2966 group of machines based on the S3 processor. At the same time the company is pushing Robb Wilmot's Networked Product Line concept very hard, discussing new features and refinements of most of its product line at a roadshow that will visit nearly 30 cities over the next few months.

The show is hauling £1 million worth of hardware around the country and is billed as "the biggest promotional event ever undertaken by a computer company in the UK".

Attendees can ask ICL personnel about many things, including the company's greatly increased interest in the IBM market which is further underlined by Roger Hill, ICL's business manager for office systems, who has promised support for the IBM 3270 bisynchronous protocol and for Systems Network Architecture "within the next 12 months" on several products. These are the DRS 20 networked microcomputer system, the Perq graphics computer and the ME29.

Visitors can also ask ICL if it regards its Mitel-built DNX 2000 private branch exchange as a lot more than simply an important element in the company's networked systems design strategy.

Proof that ICL sees the DNX as an important "foot in the door" in major organisations with little or no ICL equipment at present is provided by the company's recent hiring of a man from the telecommunications industry to head its DNX 2000 sales offensive as DNX division director. He is Dr Aodh O'Dochartaigh, previously with the Irish telecoms firm Telectron, now 40% owned by US telecoms giant, AT&T.

Back in the DRS 20 department Roger Hill has pointed to a big increase in the local area network capacity of the system following last June's international accord, reported by *Computer Weekly*, under which ICL and about 20 other companies announced their backing for the European Computer Manufacturers Association LAN standards.

Roadshow visitors can enquire about the 10-megabit LAN now in operation at ICL's West Gorton, Manchester, development centre. If they are looking for "decision support" products, a fashionable industry buzzword, they should ask ICL staff to substantiate the prediction by their boss, Robb Wilmot, that 80% of decision processing data will ultimately be carried by LANs.

They can also ask for a detailed explanation of Wilmot's argument that baseband LAN technology, like ICL's Ethernet approach, is essentially a subset of broadband. Wilmot comments "There is a lot of misunderstanding about this issue in the United States," adding words to the effect that the debate about the relative merits of baseband and broadband, and about which is going to be more popular, is largely irrelevant, baseband being a subset of the latter.

Attendees with a LAN interest can also inquire about the "numerous LAN projects planned by ICL over the next year", highlighted by Ninian Radic, sales director of product marketing. He names Kent County Council as an early LAN customer. Radic claims that ICL's new Netskil team at Reading is the largest group of LAN experts in Europe. Visitors can also ask about the voice, text and image support that Radic says are being added to ICL's Information Processing Architecture. IPA is roughly equivalent to IBM's Systems Network Architecture.

ICL's main existing LAN product, the DRS 20, achieved its first year's sales target in the first nine months, according to Roger Hill. He acknowledges that the multi-million pound orders from New York State and PAYE helped but also notes that sales of smaller numbers have also been made to other customers. Visitors to the roadshow can examine the latest enhancements to one of the newer DRS series terminals, the DRS Wordskil 8801, the former Nexos product. New is the capability to extract information from fixed format records using specific search criteria and to sort records into numerical and alphabetical sequence.

SALES BRIEF

Counting on Univac – after 31 years

A RELATIONSHIP dating back to the birth of the commercial computer industry is continuing with an order for a Sperry Univac 1100/84 mainframe for the US Bureau of Census. The $35 million contract includes 57 terminal systems, 20 System 80 computers as remote batch terminals and two laser printing systems.

The Bureau ordered the first commercial Univac computer in 1951. It now has several big Univac mainframes.

Birthday gift

BRITISH TELECOM has given Automation and Power Supplies the perfect gift for its tenth birthday: its biggest order yet. The company will supply 3,000 power units for BT's Ensign exchange for small businesses.

Brian Rix signs

FORMER Whitehall farce actor Brian Rix and ABS Computers managing director John Ekden have signed a contract under which the UK manufacturer will supply a computer to the Royal Society for Mentally Handicapped Children and Adults. Rix is the society's secretary-general. The ABS system will handle accounting for the society's expanding nationwide activities.

ICL for Life

ICL has fought off "fierce competition" from five leading US mainframe manufacturers to remain the supplier to Provident Life Association of London. In a £1 million contract the insurance company has ordered a dual 2958 to replace its ICL 1900. The eight-megabyte machine will run CME, which allows a 2900 to run its own VME operating system and the 1900-compatible DME system to ease transition to the newer range.

Fans for Prime

A PRIME Series 50 minicomputer is to be used for finite element analysis by James Howden and Company of Glasgow. The system will help with the development of large industrial fans and other ventilation and heating equipment. It will provide information on stress levels, vibration and heat transfer.

Pan Am viewdata

CONTRACT to supply, install and maintain viewdata equipment for Pan Am's new Panther real-time airline booking system has gone to Visionhire Communications, part of Electronic Rentals. The equipment includes the Bureau editing terminal and Philips domestic and desk-top viewdata television sets.

First £10,000

FIRST order for Sydney Development's new brokerage and portfolio management system has come from the London office of stockbroker Walwyn, Stodgart Cochran, Murray. The £10,000 order includes a Cromemco microcomputer.

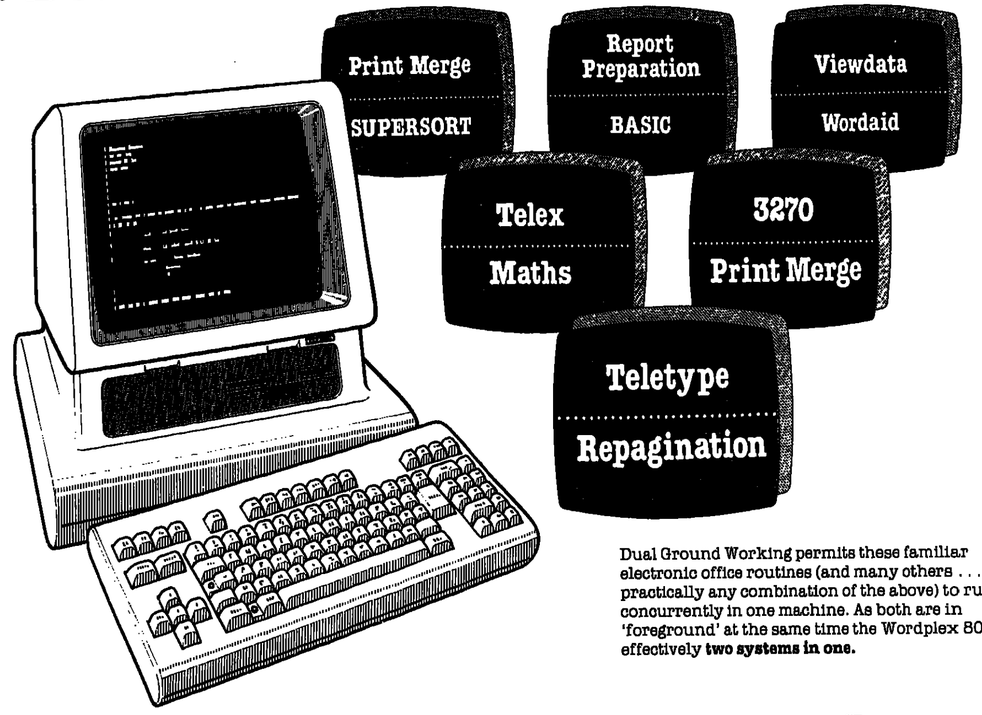
Bombay control

PHILIPS is to modernise traffic control in Bombay following an order for a turnkey project covering the installation and maintenance of traffic lights, switching systems and cables. Roadside microcomputers will control major intersections, while central computers will co-ordinate the operation of the smaller machines.

Job costing

THORNCROFT Major Services' Trace job costing system has been taken into the local government market with an order from East Sussex County Council. The package will run on the council's ICL 2903 mainframe and replace its own system, written in ICL's low-level Plan language.

The Wordplex 80-4 with Dual Ground Working



Dual Ground Working permits these familiar electronic office routines (and many others . . . and practically any combination of the above) to run concurrently in one machine. As both are in 'foreground' at the same time the Wordplex 80-4 is effectively **two systems in one.**

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The 80-4 has the additional benefit of Winchester disk storage — 10 MB capacity sealed disk unit — while transferable storage facilities are provided by a 500 KB floppy diskette.

The system is completed with the 45 cps top-quality Echo character printer.

Wordplex provide a complete range of compatible and modular office systems. For example, additional applications software or workstations may be added to the 80-4. If even greater storage and processing power is required, the 80-4 system can be integrated with Wordplex shared-resource systems.

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Sirius name lost in Victor merger

by Robert Parry

THE blending of Sirius and Victor is official, if not yet complete. US micro hardware company Sirius Systems Technology – developer of the top-selling 16-bit micro in the UK – and the US company selling the machine under its own label, Victor Business Products, have merged.

The new company will be headed by Sirius Systems founder Chuck Peddle, and will be called Victor. The Sirius name will be dropped in the US because of a legal ruling over possible confusion with a previously formed company, Sirius Software, which sells add-on games for Apples.

The merger will have little effect on the UK market. The two distributors of the different machine versions, ACT with its ACT Sirius 1 and DRG Business Machines with the Victor 9000, will continue in competition. The new Victor will honour contractual commitments with European Victor distributors like DRG, as well as supporting established Sirius distributors and subsidiaries.

Greatest changes will be in the US, where sales of the machine have so far proved less than spectacular. Peddle says he will re-focus the US marketing operation, decentralising more but playing strongly on the Victor name. Sirius and Victor operations in Europe will also be integrated under the Victor name.

"Victor has 65 years as an established name in the office equipment area," says Peddle. "There are more than 10 million products out there with the Victor name on, and we're going to build on that brand identity."

In revitalising the Victor marketing, Peddle will be trying hard to emulate ACT's methods and success in expanding the market for the machine. "ACT is our leading distributor worldwide. The European success was totally spearheaded by ACT, which showed other Sirius dealers how to bring the machine to the market. I intend to make eight to 10 ACTs in the US."

The formation of the new Victor involved transfer of more than $50 million assets from the Kidde Corporation, of which Victor Business Products was a wholly owned subsidiary. Kidde has also put in another $30 million funding, and Peddle intends to seek further public funding soon.

Victor will need this to compete with giants like IBM and DEC, and the newer publicly-funded micro companies like Convergent Technologies and Altos.

PEDDLE . . . "10 million Victor products."

Course to give sales staff DP training

by John Riley

A GROWING problem faced by microcomputer retailers is finding and training salespeople with a thorough understanding of the machines and awareness of customer's differing software needs. That is why the Polytechnic of North London in conjunction with the Manpower Services Commission is setting up a pilot 21-week course to train computer sales staff.

Robin Bradbeer, who will head digital electronics and computing, commented that this goes at least some way to answering recent criticisms of Tops schemes.

"There is a crying demand from micro salespeople and we are trying to meet this," explained Bradbeer. Hofer, course tutor in management studies. "Every high street will soon see a computer shop and it is important that professional advice can be offered in each."

The course will cover three main areas: computing, business knowledge, and marketing, and the teaching will involve extensive use of a wide range of microcomputers. The three main tutors, Bradbeer, Hofer and Barry Miles (who will teach business studies), have about 60 years' computer experience between them, and emphasise that they all have considerable involvement with industry through regular consultancy. Bradbeer and Miles were involved in the design of the first Pet Condor.

The first course will start on February 7, and will cater for 18 to 20 people, aged over 25 years, with at least two years' industrial or business experience, and O levels in Maths and English.

NEC to run own UK distribution

by Donald Kennett

JAPAN'S biggest micro maker is set to run its own UK push. NEC Telecommunications, maker of the PC-8000 range of CP/M-compatible microcomputers, has set up its own UK distribution team.

Management is disappointed that only 1,000 of the systems were sold in its first year of trading in the UK through the dealer network set up on its behalf by Reading-based distributor IBR Microcomputers.

Meanwhile in its native Japan, NEC tops the league with 40% of the market – double the share of its nearest rival, Sharp.

Both IBR and NEC agreed they were hampered by having too many levels in the distribution chain, leaving too small a margin for each.

IBR has bowed out gracefully to go up-market with the US-made Unix-compatible 16-bit Fortune Systems range, handing over its network of 32 dealers to NEC. Going direct to the dealers has enabled NEC to increase the dealers' margin and lower the suggested retail prices at the same time.

"The industry standard dealer discount is 30% to 35%," says UK computer division general manager Gary Mason. "Ours is considerably more. We want to get up to 100 dealers as soon as possible."

The 1,000 systems sold in the last year represent no more than two per cent of the UK business microcomputer market, while its rival Sharp has sold 3,000 to 4,000 systems. NEC, however, claims 25% to 30% of the printer and peripherals market and is confident of copying this success in the microcomputer sector.

"We believe the number one company will have 30% and the number four will have 20%," says sales manager Mike Flashman, "We will definitely be one of those four."

Mason, who joined NEC in July after five years at Centronics and 10 years at Olivetti before that, says: "We sell an overall solution. The system will do a user's payroll or his invoicing and we will make sure the dealer has what we believe will enable him to sell it – training, videocassettes, documentation.

"One of the failings of all companies has been lack of software."

NEC has put together six accounting and word processing packages and expects to have 12 by the end of the year.

'Liberation for users'

by George Black

THE new telecommunications standard to be introduced in 1984 would mark the liberation of the user, said Richard Lindenmuth, vice-president of Burroughs' Imaging Systems Division.

Speaking at Pergamon's State of the Art Review in London, he said the introduction of the Group 4 communications standard by CCITT, the international standards authority, would bring a significant growth of the market, adding: "It's the biggest thing that going to happen in quite a while."

Warning against an excess of caution, Lindenmuth said firms should start buying office automation equipment now: "You wouldn't put off buying a car until cars were perfected. The same applies to office machines. It's the learning process that counts."

Governments' vulnerability to strike action would be reduced by the transition from mainframes to micros, he said. "Seamless" systems which switched from one operating system to another and could call routines from a variety of operating systems were only about a year away.

But lack of software standardisation was likely to continue for several years.

Lindenmuth was sceptical about the impact of Japanese computers on the West, attributing reports of the progress of the fifth generation project to "fear of the unknown".

"We will always be one step ahead," he prophesied. Office automation was going to change the nature of many jobs, said Lindenmuth, predicting that secretaries would be upgraded and typists would become rare.

CDC launches disc attack

by Kevan Pearson

CONTROL Data has launched a major attack on the IBM compatible disc market with an IBM 3375 type disc system, offering significant performance increases over the IBM product, the company claims.

The CDC 33750 follows CDC's return to the mainstream IBM disc market earlier this year with the CDC 33800 compatible with IBM's 3380.

And IBM's latest round of US price cuts on 3370s and 3375s could indicate that replacements are on the way.

CDC's 33750 disc system is based on its 33800 products, which offer comparable performance to IBM's 3380, but with IBM 3375 compatibility. Moreover, it allows users to upgrade directly to CDC 33800 specification without an expensive hardware change.

The product is aimed primarily at the 4300 market, with deliveries starting in the fourth quarter of 1983. Derek Batey, a director of the independent leasing company PCML, expects the price to be under £60,000 "about 85% of IBM list".

He expects Memorex and STC to come to the market at about 90%. CDC can be cheaper because of its market position as the world's largest OEM supplier of disc drives.

The 33750 uses thin-film read/write heads, and each device contains four independent head disc assemblies and a single actuator per assembly making it field upgradeable to CDC 33800 specification.

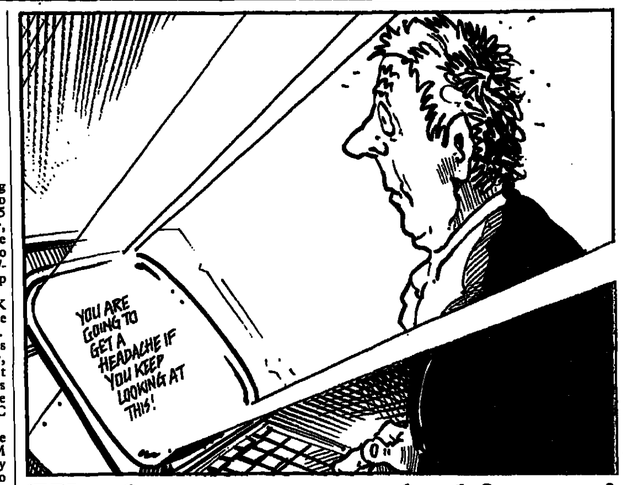
The new device will interface to a CPU via CDC's own 33800 controller. All the plug-compatible disc suppliers are building their own controllers rather than connecting through IBM's 3880 model 13, according to PCML's Batey.

Meanwhile speculation is increasing concerning an impending disc announcement from IBM to replace the 3370 and 3375 machines. At the end of October, the company cut the purchase price of these products by up to 25% in the US, while some lease/rental rates were increased, by up to 20% in one case.

The industry expects IBM UK to follow with similar price changes before the end of the year.

IBM's 3370 and 3375 products are based on the same technology, which is different from that in the 3380. Consequently users cannot upgrade with changing the hardware. This is where the CDC disc will score heavily over IBM.

And according to Batey, some users are also expecting an IBM announcement. "We can already offer cheap 3370s from users who have order positions and have not taken them up," he says. "Availability is good. There are more boxes available in Europe than there are customers."



'Word processors are bad for you'

by John Riley

WORD processors are bad for your health, and managers are to blame because they ignore ergonomic factors. That is the warning from Alfred Marks in its Word Processing Salary Survey published last week.

The findings, based on questioning 132 companies and 98 operators, show an unacceptably high number of ailments among operators. Eye fatigue among 75%; headaches suffered by 55%; backache with 35%, together with pains in the arm and neck and migraine.

On top of this, stress was caused through bad management. Seventy-eight per cent of the operators were frustrated by poor communication from managers who were ignorant of WP capabilities. This correlates with the 77% of companies which did not train their WP operators at all, and who were left to get on with the job.

John Grundy, chairman of the Occupational Visual Welfare Committee of the Association of Optical Practitioners who has co-authored several studies of VDUs, commented: "The ailments are caused by a number of factors. One-third of the working population has uncorrected vision and this comes out when working at a VDU. Glare is certainly a problem. It is getting better with screen characters getting brighter. However, the characters should be stable and not blurred, there should be no screen flicker and the contrast background should be minimal.

"Contact lens wearers have difficulties initially as the concentration reduces the blink rate and the heat from the VDUs dries the contact lenses out. The eye eventually compensates by producing more tears and the blink rate does increase when the operators are more relaxed."

Bernard Marks, chairman of the Alfred Marks Group remarked: "Management fail to take the most elementary steps to maximise the benefit from their equipment."

Intel to freeze its wages worldwide

by Robert Parry

NEXT year will be as tough for semiconductor manufacturers as 1982 has been. Latest to feel the drought is US giant Intel, which is freezing wages for its 20,000 employees worldwide from the start of next year.

"We do not see any immediate turn-up in the world economy," says systems group general manager Vaemond Crane, "and at our present profit level we can't find enough for R&D and growth."

From the estimated $880 million 1982 revenue Intel needs to find about $120 million for R&D and $150 million in capital equipment expenditure. Planned levels for 1983 are about $150 million for both of these.

"The choice is freeze wages or starve technology development," says Crane. "We can't afford to stop the technology engine. I don't see our competitors cutting back."

Intel has done better on staffing than most of its US semiconductor rivals through the reccession. While others, notably National Semiconductor and Texas Instruments, have been laying off employees, Intel increased staffing levels by nearly 3,000 last year, mainly in the US.

It did get them to work harder though, with its "125% solution". NatSemi also froze wages last year.

For European staff the coming freeze means normal annual rises will not happen next year – unless things look up during the year. But in the US it means an actual drop in pay of 10%, because 1983 rates – fixed in more optimistic circumstances in June – are already in force. The rises will be dropped from the beginning of 1983.

Crane thinks this action will be enough to see Intel through – though claims no special skill with a crystal ball. "We feel things are about as bad as they can get. Any change will be positive."

Despite the slowness of the components market, and the relative health of Intel's system group, Crane insists Intel is a semiconductor company "first, last, foremost and always".

The aim is to continue shrinking down systems to fit first on a few circuit boards, then on VLSI chips. The chips then become components for future board level products and systems, completing the circle of what Crane calls a technology treadmill.

To do this successfully, and bring out components other companies will want to buy, needs regular interfaces and a commitment to open systems.

CRANE . . . "It's that or starve technology development".

Union calls: Stand Up for Britain

by John Riley

THE computer industry is an integral part of the "inner fortress" of British industry which must be defended at all costs against countries which deny us equitable economic access.

This "inner fortress" is the keynote of the Stand Up for Britain campaign initiated by the half million strong Electrical and Electronic Telecommunications and Plumbing Union.

Chairman of the campaign, Eric Hammond, said: "We all have to stand up for British industry because if we continue as we are we're stopping employment prospects in all industries including computing.

"In getting our message across we want to break out of the narrow Labour Party – TUC arena. There is a strong feeling that the trade union movement is rather negative in its argument about unemployment, and the Labour Party is inconsistent in its attitude to it.

"It is easy to say that the government is entirely responsible for unemployment but we must remember that it has arisen over successive governments."

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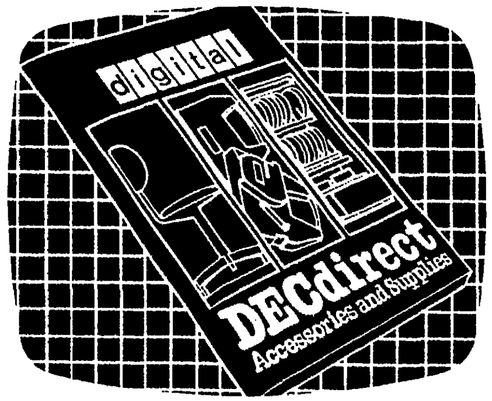

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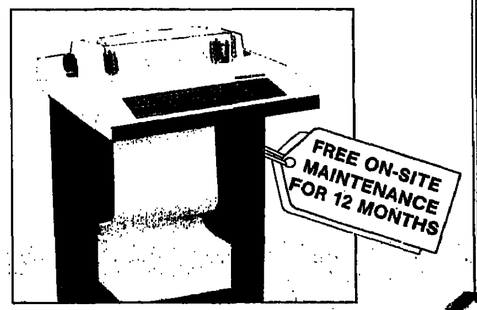

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JOBS

Al Rogers and Anne Hawkes . . . the transatlantic partnership that aimed to put UK computer staff into US jobs.

The road to Yankee gold is often full of pot-holes, as Boris Sedacca's cautionary tale for contractors relates

US link looked like a good deal—but wasn't

LAST February, Computer Weekly carried a story about the activities of a Hollywood contract agency called International Management Consultants which was recruiting UK computer staff to work in the US.

IMC was operating through a local contract agency called Computer Software Services, an outfit licensed in accordance with the Department of Employment but not registered as a limited liability company.

CSS proprietor Anne Hawkes was approached by IMC president Al Rogers to interview UK computer staff for jobs in the US, jobs which did not materialise save two.

Naturally the whole operation incurred some expenses and neither Hawkes nor Rogers wants to pick up the tab. The dispute may seem irrelevant were it not for the fact that at the time the interviews took place, Rogers was asking for money on the table from candidates to cover expenses for a law firm to which IMC is affiliated.

Rogers also wears another hat as legal administrator for this firm, called The Immigration Clinic. Hawkes claims that a total of £3,960 was taken from 44 candidates to cover "immigration costs and visas". Until the dispute is resolved they are unlikely to get their money back.

This money was put into a bank account in the UK, opened under the name IMC UK. Hawkes was one of the signatories to the account, the other being an employee of Rogers's at IMC, David Charlton.

Rogers claims only £55 was taken in cash from one candidate, Bernard Webber. The rest was in the form of cheques made out to IMC UK. Single candidates like Webber were asked for £55, while married candidates were asked for £110. One unfortunate candidate, David Parsons, was told by Rogers that if he wanted to take his fiancee with him to the US, he would have to get married first and handed over £110.

Webber wrote to Computer Weekly in early October to say that neither Hawkes nor Rogers had replied to his letters requesting a refund, and that both Anne Hawkes' telephone numbers on CSS letterhead were now unobtainable.

Computer Weekly called The Immigration Clinic's office on Sunset Boulevard but Rogers initially proved reluctant to talk. A colleague, Frank Ronzio, provided a new telephone number where Hawkes could be contacted, adding that a cheque had been sent to her for the money which they owed her.

"They sent me a cheque for $3,000 but in their covering letter, they said the enclosed cheque was for $3,500," said Hawkes.

"They also said that if I were to cash the cheque, I would be deemed to have accepted their offer in full settlement of my claim against them. What they should be reimbursing is closer to $5,000 because out of the £3,960 taken from candidates £2,838 was taken out of the IMC UK account by Al Rogers."

Rogers denies having taken money out of the IMC UK account. "The only people who could take money out of the account were Anne Hawkes and David Charlton, and Charlton did not draw any money out while he was still in our employment although he may have done when he went to work for Anne Hawkes," he said.

"What Anne Hawkes did to pay herself for operating expenses should not have come out of the IMC UK account. It was a matter to be resolved between ourselves and she had no authority to use the candidates' money."

The legal deadlock arises over the imposed term of contract written into IMC's letter to Hawkes, to the effect that her cashing the cheque for $3,000 would imply her acceptance of the sum as full settlement of her claim. Such a term is invalid in English law but according to Rogers is a commonly accepted practice in the US.

So although Hawkes could reimburse some of the candidates a full or all of the candidates in part with the money she has so far received, by so doing she would jeopardise her legal position in the US.

On the other hand, Rogers feels that there are many expenses claimed by Hawkes which his firm does not accept responsibility for. "I cannot tell you how much she advanced to me but $3,000 reflects what we consider to be what we owed to her for expenses, mainly on hotels and conference facilities," he said.

"I cannot recall any cash advances to me. There may have been some, but only minor ones."

Rogers would not confirm the amount of $3,960 which was collected from candidates. "I do not have the figures in front of me," he said. As for the discrepancy between the cheque for $3,000 and the amount of $3,500 which the covering letter said the cheque was for, Rogers admits to having made a mistake.

While both sides of the dispute argue over who takes responsibility for the expenses, over 40 US computer staff are out of pocket.

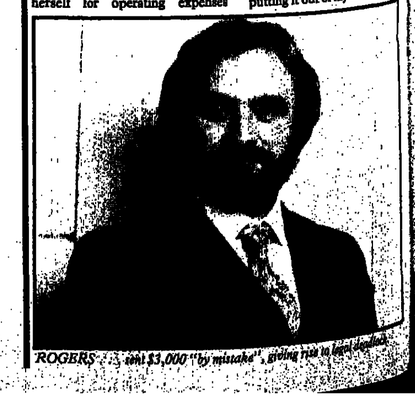
Ann Hawkes has now written to all of them to explain her situation prompted by Computer Weekly's intervention.

She is suing Rogers, IMC and the Immigration Clinic, but has told candidates they will not be expected to contribute to the cost of bringing her action to court. She claims she was against the idea of taking money from them in the first place.

The question of signing powers for the IMC UK account is one which Hawkes does not want to discuss in detail. "I know what my way I am going legally with them and I do not want to jeopardise this process by saying anything now."

In the meantime, over 40 candidates are out of pocket and still waiting in the UK. "I should emphasise that my plans to go to the US are unchanged, but I no longer want to do it with this agency," said Webber.

Parsons added: "I have given up hope of ever going now. I am just putting it out of my mind."



ROGERS . . . sent $3,000 "by mistake", giving rise to legal deadlock.

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To bring home the Arab experience speakers will include leading industry experts and users from the region. Their knowledge will provide a true perspective on current practices and developments. Middle East Computing is organising the conference. Published by IPC, the world's largest business publishing house, MEC is an associate of Computer Weekly, and circulates to 6,000 computer users throughout the Middle East.

This major event takes place during the Gulf Computer Exhibition which will be held within the Dubai International Trade Centre from December 13-16 1982.

Programme

Tuesday 14th December

08.15 Registration of delegates
09.00 Official opening
09.15 Keynote speech: Computing Developments in the Middle East. Ahmed Hussain, Data Processing Manager, Dept of Health and Medical Services, Dubai, and founder of Data Processing Management Association.
09.45 The era of satellites — Arabsat, its implications for telecommunications and data communications. Dr Ali Al Mashat, Director General, Arab Satellite Communications Organisation.
10.30 Coffee
11.00 Planning and implementing a data communications network in the Middle East. Charles Allen, Managing Director, Gulf Computing Systems.
11.45 Local area networks. V E Cheong, Consultant, Sciecon Ltd
12.30 Panel discussion
13.00 Lunch
16.00 Implementing a word processing network. M Kent, Project Leader, Computer Services Division, ADMA OPCO.
16.45 Creating an Arabic database. Chrisstn Veverka, Project Manager, Tom Pedersen International
17.30 Tea
18.00 Banking: the SWIFT network and its impact on the Gulf banking community. K H Holdenbrock, SWIFT Business Development Officer, SWIFT
18.45 Panel discussion.

Wednesday 15th December

08.30 Registration of delegates
09.00 First system: The issues facing a company setting up its first computer system. Dr A. H O Said, Information/Computer Services Manager, Qatar General Petroleum Company.
09.45 Introducing personal computing into the organisation. Jack Sherwood, IBM Dubai
10.30 Coffee
11.00 Interactive graphics. Mario Bouare, Managing Director, Calcomp ME & A
11.45 Development of Arabic computer systems. Esam Samara, General Manager, ICS
12.30 Panel discussion.
13.00 Lunch
16.00 Trainings: Middle East initiatives in meeting local requirements. Hisham A Almutlu, Manager of Computer Training Center, Ministry of Planning, Kuwait.
16.45 Maintenance and support of computer systems. Ali Moawad, Managing Director, National Enterprise for Computer Services.
17.30 Tea
18.00 Training for user-friendly systems. Colin Corder, Senior Partner, Krish London Associates.
18.45 Panel discussion

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EARLY BOOKING ADVISED

SOFTWARE FILE

How will APL affect micros?

by George Black

EXPERT opinions conflict about the likely impact of the APL language on the micro market.

Romilly Cocking, of Cocking and Drury, the APL programming consultancy and support agency, forecast confidently that APL would displace Basic as the main micro language within five years.

"It has taken ten years for APL to reach the micro and we are always fighting against the conservatism of programmers," he said. "But the breakthrough is at hand."

However, Dyadic Systems' Phil Goacher, was more wary. "I think Basic will continue to be a major force in the home computing and educational field, but APL is going to prove much more flexible for the business world," he said.

Meanwhile Inner Product Limited is planning an invasion of the schools by giving the language free in the spring term of next year. First takers will be the Inner London Education Authority. Westminster City School has already led the way by setting up its own company to promote APL programs.

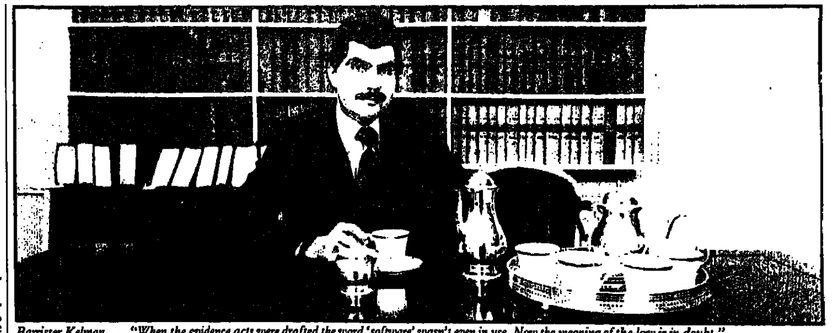
IPL has just announced an APL interpreter called VIZ::APL, which gives a workspace of one megabyte on an 8-bit machine. The interpreter has the backing of Berisford Information Technology.

At the same time IPL is making APL available on an IBM Personal Computer for Tesco, where it is undergoing testing.

Director Dominic Murphy said: "We intend to break the mould by introducing an 8-bit implementation at a low price which will put APL on a footing with Cobol or Fortran. There ought to be a significant impact in the schools."

They were talking at an APL roadshow at London Imperial College where new language products were launched at an exhibition and seminar session.

Dyadic Systems presented a portable version running under Unix at the show and Data General showed a version compatible with Sharp APL and APL*PLUS. MicroAPL introduced its 16-bit Scimitar model.



Barrister Kelman . . . "When the evidence acts were drafted the word 'software' wasn't even in use. Now the meaning of the law is in doubt."

UK firms wide open to fraud, says Kelman

by George Black

MANY British firms are at the mercy of unscrupulous employees because their systems are inadequately documented, a British Computer Society meeting heard.

The evidence that could be produced against an internal fraud was so flimsy it would be thrown out of court, said Alistair Kelman, a barrister specialising in computer problems.

Fraud was now endemic in computer installations, the meeting was told by Richard Sizer, co-author with Kelman of the book The Computer in Court.

Kelman said every installation should keep comprehensive records of its hardware, operating systems and software as well as of the skills of all the personnel involved and a logbook of faults and updates. Methods used to test the systems should also be accurately set down. Only thus was there any chance of convincing a court that output was reliable.

Yet there were very few British firms that complied with even the minimum safeguards needed to put forward an acceptable legal case. Documentation was often either non-existent or out-of-date.

Kelman recommended changes in the law to bring together the civil and criminal evidence Acts, making specific mention of the admissibility of software in court.

"When the Acts were drafted the word 'software' wasn't even in use," he pointed out. "Now the meaning of the law is in doubt."

If printout was to be called in evidence the fact should be stated at committal proceedings, he argued. Nobody could even say at present whether computer evidence was to be treated as real evidence or as hearsay.

Sizer said: "Many systems can be penetrated by staff who are barely literate. And the position will get worse and worse. Looking at Home Office statistics there is little evidence of the growth of computer fraud. But that's not surprising because until recently the official form had no box to record this category of crime."

Variety of hardware on Amexon 'growth path'

by Claire Gooding

ABILITY to grow in computing power without changing applications is the main lure thrown out to users by a new British company, Amexon.

Applications which grow with the needs of the user are rare enough. What is more unusual about the service offered by Amexon Communications and Computer Systems is that it is using a variety of hardware in its "growth path" policy.

Users can move from a Unix-based time sharing system based on the Plexus super micro, running Unix System III operating system, to their own single-user or fully fledged multi-user 16-bit systems.

The single user machine initially on offer will be the IBM Personal Computer, for which Amexon is a UK distributor. The in-house multi-user system will be Unix-based minicomputers, sold with applications.

"The idea is to grow upwards," explained managing director John Dobson. "Maybe the user will start with two or three packages on the time sharing machine and then progress from that to the IBM PC.

"The company further up the scale, with 500 or more employees, is going to need its own machine, but the ultra-small company of four people who just need some way of keeping the books will still have access to good software with the potential to move onto a single-user system.

"There's really no such thing as a typical user – the range of a service like this is difficult to describe."

Amexon has already negotiated with several software houses to be able to offer a variety of Unix-based applications.

It will be offering accounting packages from London software house Bonsai, some being Anglicised versions of US packages written in Ryan McFarland Cobol. Sales ledger, purchase ledger, general ledger, inventory control and order entry are also on the list.

Amexon will be supplying the Xed word processing package from one of the first British software houses specialising in Unix, Precision Software, and taking on a financial planning package from the newly-formed software enterprise run by one time hardware lessor Itel.

British Gas exports

BRITISH GAS

A COMBINATION of private and public enterprise is helping to export British software knowledge.

British Gas's International Consultancy Service has been teaming up with UK firms who act as main contractors for projects in developing countries.

Computer applications programs play a part in many of the orders carried out by the ICS. It was ICS which provided the backup software for a new gas system installed by William Press in the suburbs of Cairo.

The consultancy has been in operation since 1970 and now earns up to £8 million a year in over 30 countries around the world.

Other schemes have included a control advisory program for West Germany and Australia, gas distribution systems for Bangla Desh, a pipe stress analysis program for Australia, a feasibility study for Dubai and a safety audit for Hong Kong.

But the highly developed Japanese and American markets are still the most commonly exploited ones for ICS. As well as specialist programs for gas systems, ICS systems previously used by the gas corporation for customer accounts and management information are marketed overseas.

Pegasus venture takes off

by John Kavanagh

JOHNNIE JOHNSON is enjoying the move from programmer to managing director at Pegasus Software: in its first seven months the microcomputer software firm has reached a turnover of £162,000 and a trading profit of £63,000. It is aiming at sales of £450,000 and a £200,000 profit in the next year.

Pegasus was formed in January by microcomputer retailer HB Computers to sell the Pegasus accounting and stock control package developed by Johnson, who was made top man. The system, written in Basic, runs on the Commodore 8000, the ACT Sirius, the DRG Victor 9000 and the Sharp 3201. A version for the CP/M operating system is also available. The system is sold through 250 retailers.

JOHNSON: From programmer to managing director.

"It's been a bit of a hassle moving to management," said Johnson. "It takes you away from the technical side and I rather miss that."

£36,000 to develop software for doctors

by Donald Kennett

MANCHESTER University has teamed up with a local group of doctors to develop CP/M-compatible software for general practitioners.

The project is backed by a £36,000 grant for equipment from the Department of Health and Social Security, despite the fact that the doctors have picked a micro which is not one of the two systems made available to 150 selected practices under the £2.5 million Micros For GPs Scheme announced in June.

The official systems are from CAP and British Medical Data Systems, but Manchester University's project at Barlow Medical Centre is based on a nine-terminal Multicomputer M200 which will be used by four doctors and their ancillary staff.

University medical computing and computer science department staff will write programs for the system, which will then be available to other practices.

The Centre's senior partner, Dr Clifford Kay, was chairman of the Royal College of General Practitioners' computer working party which two years ago recommended using a local computer network to develop a multi-user system for GPs.

The M200 is made by Molecular Computer in the US. It enables up to 255 users to share hard disc storage and printers while each having their own 64 Kbyte Z80 processor housed in the central system. It runs a CP/M-compatible operating system.

An important factor in the selection of the M200 for Barlow Medical Centre was that Multicomputer had modified it to provide the resilience of a duplicated file processor so that the Centre can have a back-up copy of all its records on a second 20Mbyte Winchester disc.

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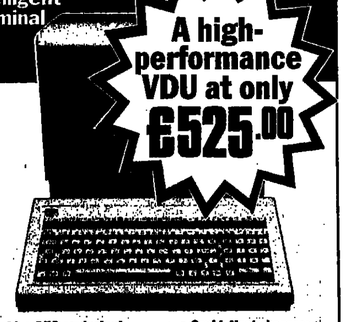

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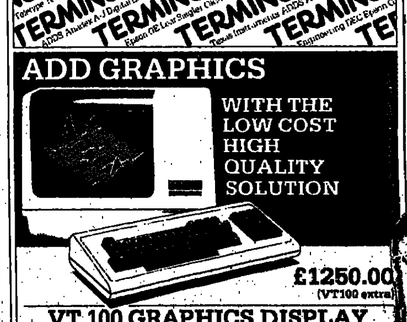

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COMPANY NEWS

Growth slips for some US giants

A MIXED bag is the only way to describe recent financial results from the US.

A rise of 10% in new orders, from last years' $218 million to $239 million, is the only bright spot in first quarter results from Connecticut semiconductor and 32 bit mini maker Perkin Elmer.

The company reported a 41% fall in profits for the period ended October.

Sales turnover also fell, from $251 million to $235.2 million, a 6% lower outcome than in the same period last year.

Order backlog, a significant shield against any sudden swing in the economic climate, was down from $447 million on October 1 last year, to $405 million.

Reporting on the results Robert Sorensen, chairman and chief executive, said orders were ahead in all the company's main divisions including semiconductor processing equipment, minicomputers and electro-optical equipment.

Only the West German subsidiary, in line with the experience of many US companies trading there, showed a fall in orders for analytical instruments and for thermal sprays.

Wang, for long one of the industry's leading growth companies, turned in impressive first quarter results, but growth showed a significant drop on the 40% of the last two years.

The Massachusetts based minicomputer manufacturer, brainchild of Chinese immigrant Dr An Wang, showed sales 29% up at $305 million, compared with $236.9 million for the same period last year.

Profits stayed on a higher growth path, increasing 39% to $25 million, compared with $18 million for the quarter ended September 1981.

The rate of new order intake showed a slowdown, with a 32% rise in new business, compared with the better-than 40% of this time last year.

In sharp contrast with most US corporations operating in Europe, Dr Wang was able to report a strong performance on this side of *the Atlantic.*

And the company beat off the adverse effects of a strengthening dollar to show improvements in both pre- and after-tax margins compared with last year, according to Dr Wang.

The slowdown at Tandem, noted earlier this year by various New York financial commentators, continued with fourth quarter sales revenues showing only 42% growth, compared with the 60 to 100% rate of the past two years.

Sales for the fourth quarter were $91.1 million, compared with $64.5 million for the period ended September 1981.

Although there was a slight fall in pre-tax profits, from $14.8 million in the final quarter of last year, to $13.8 million for the same period this year, there was a slight improvement in the after-tax position, from $8.2 million, to $9.5 million.

The maintenance of the profit figure, which showed no real increase on last year, was substantially due to a fall in interest charges paid by the company on its loans from $2.45 million last year, to $930,000 for the final quarter this year.

The fourth quarter slowdown had little impact on the full year's results from Tandem, which showed sales 61% ahead $335.8 million, compared with $208.3 million for the full year ended September 1981. Profits were 40% *ahead at $37.2 million.*

The volume of capital and R&D expenditure of Tandem continued at a very high level, especially for a company of its size.

James G. Treybig, the company's founder and president, has always been heavily committed to the future, and in the annual results he recorded $33 million, nearly 10% of turnover, as expenditure on new R&D. Capital expenditure on new plant and equipment was $63 million.

John Louth, Tandem's UK managing director, who has just moved up the company to take over responsibility for Holland, Belgium and Israel, said that business was very good. Last year Tandem installations in the UK trebled, a number equal to all those installed in earlier years.

LOUTH . . . Tandem installation in UK trebled in past year.

Khan assets may not cover costs of liquidator

THE liquidators of collapsed Birmingham computer company Micro Xeno are still unsure whether enough assets remain in the company to pay for their work.

A spokesman at Laurence Gerard, the London-based accountants handling the affair, said that a preliminary survey showed disposable assets of less than £2,000 with liabilities standing at around £480,000.

The spokesman emphasised that this was an initial impression.

According to one report most of the documents relating to Micro Xeno's affairs were handed over to the Ministry of Defence, which has expressed puzzlement.

Bart Khan managing director of Micro Xeno, did no work connected with national security and the Ministry could find no record of any documents given to any of its establishments in or around Birmingham.

The sole remaining director of Micro Xeno, Brian Cartmill, is in lodgings without a phone, and all the Micro Xeno phones have been disconnected.

The liquidators seemed unsure whether they would be able to prepare a report, partly because of the lack of documents and partly because of the lack of cash to pay their staff to produce a document.

Although the liquidators have a list of shareholders in Micro Xeno, *they were not prepared to disclose* the contents of the document.

Barclays Bank is owed about £160,000 but other debtors have not emerged in any numbers. Only four attended the creditors' meeting on November 9.

Khan and his technical expert Ray Baker, did not attend the creditors' meeting and have not been seen since early in October

Americans get most of development grants

by Kevan Pearson

US COMPANIES are taking the lion's share of development grants for high technology companies in the UK, and most of those are in Scotland.

In the second quarter of 1982 US companies took almost £2 million in development grants, with IBM receiving most – a total of £1,389 million, in several discrete lumps.

A spokesman for the company said the grants were for "normal capital investment" at the plant, and are paid in arrears so it was impossible to say how the money was used. One of the criteria on which the grants are awarded is that they are used to create jobs.

All of IBM's grants were earmarked for its Greenock plant.

The company has recently expanded at Greenock, and it is expected that the Personal Computer will be built there after it has been launched in Europe, early in 1983.

Another significant receiver of grants is National Semiconductor, the troubled US chip manufacturer. NatSemi received over £250,000, also earmarked for the Greenock area.

HP hoists its profits by 25%

HEWLETT PACKARD has followed the glamorous $1 million launch at Compec of its 32-bit desk-top machine with the announcement of impressive full year figures showing sales up 19% and past the $4bn mark, and profits 25% up on last year at $383 million.

A useful 6% of the profit increase came from the tax concessions made by President Reagan.

Given HP's relative size, and the difficulty of maintaining high levels of growth with more than 67,000 on the payroll, performance this year is likely to be better than even such growth oriented companies as DEC.

Young attributed much of the strongly held growth to good customer reception of the stream of new products introduced in 1981 and early 1982.

In the final quarter, ended October 30, Young reported that HP had pulled in over $1bn worth of orders, 18% up on last year.

YOUNG . . . Over $1 billion worth of orders.

SHARES TABLE

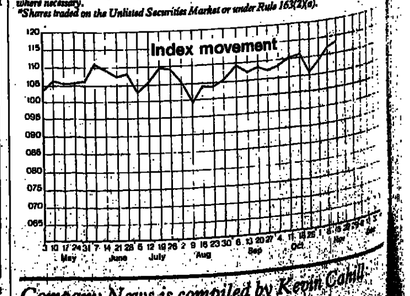
The shares table, which is specially compiled for Computer Weekly, shows selected computer companies that reflect the state of the computer industry

Data 18/11/82 Index 112.21 Dump 48

Pence 1982 High	Pence 1982 Low	London Stock Exchange Stock	Pence Price	Pence C'nge	$ 1982 High	$ 1982 Low	US Stock Stock	$ Price	$ C'nge
250	151	ACT (Apg Com) (25p)	250	+ 12	33	18	Amdahl	31¼	+ 1¼
199	199	BOC Int. (25p)	199	+ 4	31¾	11¾	Apple Inc	31¾	+ 1¼
44	18	B. Bov Kent (25p)	44	+ 2½	6¾	2¾	Auto Data Pro	6¾	+ ¼
127	101	Chubb (20p)	116	+ 2	46¾	30¾	Burroughs	46¾	+ ¾
127	46	Chubb C (25p)	126	+ 10	46¾	30¾	Comp Assn	46¾	+ ¾
303	180	C.A.S.E. (25p)	293	+ 5	19½	11¾	Comp Sciences	19½	+ ¾
720	445	De La Rue (25p)	573	+ 10	41½	27¾	Control Data	41½	+ ¾
250	177	Ferranti (25p)	278	+ 10	41½	27¾	Cray Research	41½	+ ¾
494	313½	Ferranti (50p)	313	+ 12	32¾	20¾	Data General	32¾	+ ¾
348	180½	GEC (50p)	313	+ 12	32¾	20¾	Datapoint	32¾	+ ¾
76	33	ICL (25p)	76	+ 3	33	19¾	Dataproducts	33	+ ¾
47	36	Kalamazoo (10p)	38	+ 1	33	19¾	Digital Equip	33	+ ¾
326	223	Kodak Int (25p)	326	+ 3	46¾	30¾	Elec Data Sys	46¾	+ ¾
315	219	Memec (10p)	315	+ 2	46¾	30¾	Gen Automation	46¾	+ ¾
183	110	Muirhead (20p)	180	+ 2	46¾	30¾	Harris	46¾	+ ¾
150	118	Muirhead (1981) (8.08)	150	+ 2	46¾	30¾	Hewlett-Packard	46¾	+ ¾
320	670	Norsk Data	290	+ 25	46¾	30¾	Honeywell	46¾	+ ¾
670	295	Plessey Elect (25p)	670		46¾	30¾	IBM	46¾	+ ¾
525	445	Philips Lamp (£10)	525	+ 30	46¾	30¾	IBM	46¾	+ ¾
443	349	Plessey (50p)	443	+ 10	46¾	30¾	Intel	46¾	+ ¾
97	30	Quest Auto (10p)	97	+ 2	46¾	30¾	Intl Computers	46¾	+ ¾
307	233	Racal Elect (25p)	307	+ 3	46¾	30¾	Intl Harvester	46¾	+ ¾
203	171	Redifusion (25p)	203	+ 3	46¾	30¾	Magnetic Periph	46¾	+ ¾
288	160	Star Comp (10p)	288	+ 13	46¾	30¾	Memorex	46¾	+ ¾
288	160	Thorn EMI (50p)	288	+ 13	46¾	30¾	Motorola	46¾	+ ¾
102	74	UCB-T (50p)	102		46¾	30¾	National Semi	46¾	+ ¾
		OTHER MARKETS*			46¾	30¾	NCR	46¾	+ ¾
90	62	Bus Comp (10p)	85		46¾	30¾	Perkin-Elmer	46¾	+ ¾
208	76	Commit (C&P) (10p)	208	+ 1	46¾	30¾	Prime	46¾	+ ¾
150	150	Int'europe Tech (50p)	150		46¾	30¾	Raytheon	46¾	+ ¾
283	245	Ir Tech (50p)	245		46¾	30¾	Sperry	46¾	+ ¾
80	43	Micro Fin (50p)	43	+ 1	46¾	30¾	Sperry Univ	46¾	+ ¾
199	152	Micro Sys (10p)	152	+ 1	46¾	30¾	Storage Tech	46¾	+ ¾
150	113½	MSAI (£1)	142	+ 1½	46¾	30¾	Tandem	46¾	+ ¾
129	45	Rollo & Nolan (10p)	129		46¾	30¾	Texas Inst	46¾	+ ¾
120	76	Scantec (10p)	88		46¾	30¾	Wang Lab A	46¾	+ ¾
150	80	Trident Comp (10p)	85	+ 5	46¾	30¾	Wang Lab B	46¾	+ ¾
112	76	Zygal Dyn (5p)	85		46¾	30¾	Wyly	46¾	+ ¾

The table shows the closing prices in London on Friday and in America on Thursday. The Dow Jones Index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted where necessary.

**Shares traded on the Unlisted Securities Market or under Rule 163(2)(a).*



Company News is compiled by Kevin Cahill.

Profits and sales up at Gandalf

ONTARIO-based Gandalf, the telecoms supplier with a UK manufacturing plant at Warrington, has upped profits and sales for 1982, according to the annual report just released.

Sales in Canadian dollars were C$53.3 million, a 33% rise on the previous year's C$40.2 million.

Profits did even better. Gandalf founder and president Desmond Cunningham reports profits of C$6.69 million for 1982 compared with C$4.1 million in 1981.

Cunningham also disclosed a big gain in productivity with employment at Gandalf rising by only 25%, while profits went up by 33%.

Gandalf is a major supplier of communications equipment and over 37% of its business is based on its PACX product line which includes the Pacnex switching system introduced earlier this year.

Pacnex is based on a PACX IV processor, which comes complete with routeing software and the ability to use voice and data on the same line. This is the core of Gandalf's increasingly complex product lines.

The company has seen growth in two other areas, mobile radio systems and radio modems.

Gandalf went public for the first time earlier this year and raised over C$21 million to fund expansion and R&D.

Sales in the UK rose from C$4.5 million in 1981, to C$6 million in 1982, a 33% increase in volume.

Sales in the US came to C$27 million, a little over half of Gandalf's entire business.

Between 1981 and 1982 the company doubled its noticeably low spending on R&D, boosting expenditure to C$4.2 million.

R&D prior to that was 5.4% of sales revenues and Cunningham says the company intends to spend an increased amount on R&D this year.

It's the software that counts for computerising pay-in slips.

Cashing in on bank clearance procedures

by George Black

WHEN the banks call a halt to the manual clearance of pay-in slips at the end of next year, printing standards will have to be tightened. The result could be a boom for the people who make the encoded, machine-readable documents – or for those who market the machinery to produce them.

Among those who do both is Rochford-Thomson International, whose UK home is in Newbury. RT has announced an automatic finishing station controlled by an OEM minicomputer.

The Wescode AFS cuts, collates, stitches and binds the books of personalised stationery.

"These days anyone can make hardware," said managing director Roy Rochford, but it's the software that provides the machine's flexibility."

Cheques have been cleared automatically for some time. Now the banks have agreed to do the same for credits.

"Many companies which produce their own transfer slips will have to make sure they are up to standard," said Rochford.

Other growing uses of their equipment and of the Assembler language software include television rental books, building society transactions, council house rent books, mail orders and insurance premiums. The arrival of building society cheque books could give a further boost to the market. RT programmers provide a bureau service worldwide.

The Wescode 2200 with floppy disc or key input and two daisy-wheel printers in tandem, is already widely used by banks and local authorities. Now RT has also brought in an ad hoc convenience model, the 3300, for either magnetic ink character or optical character recognition.

"This is for the smaller jobs rather than the volume throughput which the 2200 can handle. We hope it will make an impact on the credit slip market," said technical director Chris Scorey.

The printer can turn out up to 2,000 cheques or slips an hour.

Scorey was cautious about laser printing. "We think it's too soon to make such a massive investment," he said.

MICRO NEWS

'Personal mainframe' puts HP on 32-bit map

THE 32-bit microcomputer has arrived. Not that the HP 9000 series unveiled by Hewlett-Packard last week will be styled a microcomputer. Terms like "personal mainframe" and "integrated workstation" seem to be preferred.

But the form of the machine is little different from the standard eight-bit microcomputer or personal computer; it just has something like 100 times the power – and in some cases 100 times the price.

The 9000 centres around the 32-bit CPU chip shown off by HP at the International Solid State Circuit Conference this year and last year. This is one of five high density VLSI devices built by HP at its Fort Collins operation, the development of which went hand in hand with a project aimed at the engineering workstation type of product.

"The HP 9000 is the culmination of our largest R&D project ever," says HP's president and chief executive officer John Young. "It has cost hundreds of millions of dollars, and we have *been working at it since the mid-*1970s."

For HP, the 9000 is more than just another 32-bit machine. The VLSI technology developed has allowed the mainframe power to be shrunk to fit a desk-top unit, and to come down to a price range where it is feasible to give engineers and scientists their own personal machines – assuming desk-top workstations at £20,000 to £45,000 fit ideas of feasibility.

The chip set is manufactured in a NMOS process, called NMOS-III, which uses optical photolithography to produce 1.5 micron circuit features with 1 micron spacings. HP claims the devices are up to eight times denser than other chips available on the market.

Along with the 32-bit CPU comes an input/output processor, a memory controller, a clock chip, and a 128K RAM – the highest capacity RAM yet to be used in a commercial product. All are pro*duced in NMOS-III. The high* level of integration dramatically reduces the chip count for the full computer system: 98 chips for an HP 9000 with one Mbyte of main memory rather than 5,000 in rival 32-bit systems, according to HP.

The chip set will not be offered on the merchant semiconductor market – the only way to get hold of the chips is to buy an HP 9000 – but the NMOS-III technology will spread through other ranges of HP computers.

Other developments will include increased density memories, with 256K and then 512K chips likely to appear next year, allowing expansion of the current 2½ Mbyte limit on main memory in the desk-top system. At the moment this is limited by the number of board slots available in the card cage and the amount of memory that can be crammed on to each board.

The development of the chip set was unusual in that it was closely tied *to the one particular machine.* Integrated circuits are not typically designed with a specific end product in mind. But from the word go the chip design, production process and HP 9000 system architecture were closely linked.

"It's a different kind of computer," says Paul Ely, general manager of the computer systems group. "It gives much more power at lower cost per user. We've got to convince users that the old way of doing engineering computing, time sharing a mainframe, is not the way to continue."

But Ely does not see the machine as a replacement for mainframes in the long run. HP is rather out to topple the DEC VAX machines from their pole position in the scientific and engineering mini market.

ELY . . . A different kind of computer from HP.

Speech recognition in Europe about to boom

THE European market for speech recognition and synthesis equipment is set to boom, despite its chaotic and uncertain state at the moment. The market is expected to push past $1,000 million by 1990, according to a report* from US research firm International Resource Development, but will soon be dominated by non-European manufacturers, principally NEC, Fujitsu and Texas Instruments.

But while speech recognition work by these US and Japanese suppliers tends to focus on data entry applications, European eyes are looking to the possibilities of automatic translation systems.

There is genuine high level interest within the EEC bureaucracy in sponsoring such systems, says the report, though it remains pessimistic about their successful development in the near future.

The spur to data entry applications development is the increasing complexity of military equipment, particularly aircraft, that are dependent on computers and need better ways of communicating with the computers than pushing keys on a keyboard.

In this country work on speech recognition centres around the Speech Recognition Club at the National Physical Laboratory. This now has 10 members – one more than when it was set up over a year ago. Members include Plessey, Ferranti and Quest, along with GEC Marconi, Thorn-EMI, ICL, STC, Racal, Logica and Smiths Industries, according to IRD. The group is looking at both commercial and military applications, but according to the leader of the research team, Brian Pay, the people developing commercial aspects are much less active than the military application people.

Pay says that so far only isolated word recognisers have moved out *of the laboratory environment,* though continuous speech should certainly be feasible within a few years. But he adds that the problems of producing reliable systems are not yet solved.

Like the IRD report, Pay is well aware of the likely impact of the Japanese electronics companies.

"Japan has gone very quiet," says Pay, "but one can't help thinking they are beavering away."

* European Speech Recognition and Synthesis Markets. IRD, 30 High Street, Norwalk, CT 06851, USA. $985.

Globe gets London distributor

NEWCOMER to the British microcomputer building club Globe Business Machines is spreading its wings from its Bristol base. Wimbledon software house Intelligence (UK) – of MicroMouse fame – has signed up with Globe to act as a distributor in the London region.

Globe started delivering its eight-bit CP/M machines three months ago, and is presently shifting about 90 systems a month through its 16 dealers. These are all within 150 miles of Bristol, and supported by Globe itself. As production of the machines ramps up to a planned 200 machines a month, Globe wants to expand more into the London area.

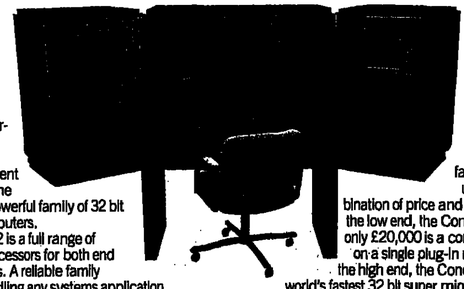
"We met Globe six months or so ago," says Ashley Ward, managing director of Intelligence (UK), "and liked their realistic approach of taking a standard machine and loading it with useful software."

Ward sees the involvement with Globe as an experiment, although Intelligence already has a hardware involvement through an autonomous subsidiary, Intelligence Systems.

WARD . . . Experimenting.

Micro News is compiled by Robert Parry.

When you're buying a minicomputer, invest with confidence in the experience of GOULD S.E.L.



As a major division of the $2.2 billion international Gould Corporation, Gould SEL present Concept 32—the world's most powerful family of 32 bit super minicomputers.

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Electronics & Electrical Products

PLATFORM

Gerry Tuffs is managing director of Data Type.

Both sides can benefit from university collaboration

COLLABORATION with industry, especially high technology industries, is an accepted feature of American university life and a number of significant products have resulted. Such a relationship is clearly fruitful, but has so far failed to flourish in the UK where, with a few exceptions, universities, polytechnics and other higher educational establishments do not form productive links with the indigenous computer industry.

One reason for this is the lack of motivation on the part of the universities.

For centuries, our universities have been amply funded and so have not experienced the need to seek income from the outside world.

Secondly, industry has been distrustful of universities' activities; not because of the ideas that they beget, but because those ideas lack the trimmings that make a product marketable. Only the largest technology companies are in a position to buy ideas rather than finished products.

The scene is rapidly changing though, on both sides. As higher education in the UK is faced with shrinking funds, it will be looking to increase its revenue by external means – and gaining a commercial sense at the same time.

Data Type has always had a close relationship with its educational customers. Indeed, the company got off the ground thanks to a large maintenance contract with the University of Cardiff, followed up by the decision of Bristol University to standardise on the Data Type range of video display terminals. This relationship benefits both parties considerably.

From the supplier's point of view, there are pure financial advantages in selling to the educational market. No bad debts, for one thing! More seriously, the colleges and universities represent a large market. There cannot be a British university with less than £1,000,000 worth of computer equipment to be maintained and upgraded. And it is a consistent market.

Even more important than these considerations is that the universities can provide the supplier with an enormous pool of intelligent and competent users who can thoroughly evaluate new products in a new perspective.

All those who think that academics have no appreciation of what the commercial market requires are making a big mistake. In general, university users are using technology three years before it hits the office desk and we have found that throwing a new product into a university environment produces valuable feedback.

And any product in a university is going to be subject to an intensive use it will probably never again experience, so any potential weaknesses will soon become evident.

Our university customers are delighted to be asked to try out new pieces of equipment – it lets them get their curious hands on technology that they might not otherwise have access to.

In return for the help we get from our university customers, we endeavour to give them value for money and the products they want.

Gerry Tuffs

PROFILE

There's no stopping for this 5.30am transatlantic jogger

JOHN KASON is a dedicated jogger. He goes out at 5.30 every morning and does three-and-a-half miles on weekdays, seven at weekends, either on Hampstead Heath when he's at home, or in the woods of Dallas when he's away on business.

At 60 he needs to be fit to work a 12-hour day, including weekends. Kason is the head of UCC, the second biggest independent software multinational – software revenue $66 million a year – and he's a Brit who was asked to cross the Atlantic to turn the company around.

He did.

Born in Poland, Kason came to England in the 1930s and retains the emphatic loyalty of the immigrant who is grateful for everything he is offered. Following service in the RAF he went to London University after the war to study telecommunications.

When he graduated he joined Ferguson and simultaneously studied mathematics at the Regent Street Polytechnic. He became chief engineer for Dulci by a fluke.

KASON . . . "I enjoy work, I love people".

"It was picking up a challenge without evaluating too much its chances of success. If I had evaluated too much I wouldn't have done it. That's how it has always been with me."

He developed tape recorders and sold them at the rate of 500 a month. Dulci offered him a partnership but he could not raise the capital, so he moved on to designing hi-fi for EMI.

"I was involved in the design of the first EMI valve computer, the Emidec 1100."

After two years with EMI he became chief engineer at Ford's Dagenham plant, helping to set up manufacturing team with 800 engineers was built up and they started making transistorised computers: one machine every two weeks. In the middle-Fifties, this was the biggest division of EMI.

The Emidec 2400 was sold to the Soviet Union. A large and sophisticated machine, it was still in use in Moscow until recently.

EMI's computing operations were suddenly taken over by ICL (then ICT). "I said, hey, I'm not working for you. I've built up this business from next to nothing and I felt I should at least have been informed about what was going on."

EMI had a chance to become as big as IBM, he said, but they had taken a wrong direction – "they chose the Beatles instead". He shrugged.

He chose Univac next, out of several offers.

Among Univac's customers were a Birmingham computer services company which was taken over by UCC.

"It was a surprising thing for UCC to do and even more surprising was that the Birmingham people recommended to UCC I should become director."

He was made a director of the British subsidiary in 1968 and took over responsibility for the new 1108 in London.

UCC bought Zurich-based Automation Centres International, with bureaux all over Europe, and it fell to him to save it from collapse.

"I was two years on the road, trying to build up a management team and to save our clients. They were not getting the service they wanted and we had dissatisfied programmers. It was quite a struggle, but we succeeded."

In 1974 he was asked to go to the US to work directly under the UCC president.

"It was my first exposure to American methods and I was shocked; the approach was so different. For one thing there were much longer hours. But there was also a new degree of satisfaction."

Under the Nixon and Ford administrations he was appointed adviser on trade matters. 1976 saw him rise to European president and for the next two years he was involved in expanding the software side with SPI.

He drew a hasty curtain over the Datran episode, except to recall that the head-on collision with Bell Labs had been "a disaster which put us back many years.

"When I became president of the company in 1978 the newest computer we had in Dallas was ten years old. And you can't get complacent in this business."

It was in February 1979 that he finally climbed to the top of his chosen tree, becoming chairman of Wyly Corporation, the parent organisation.

Why didn't he retire now? "Why should I? I could improve my golf handicap; I guess, but what for? I enjoy work, I love people."

He couldn't remember when he had last had a two-week holiday, but said he slept well and found time to read a lot of books.

His family lives in London. He has a son and a daughter – the latter a programmer/analyst. Like father, like daughter.

And why the "University" Computing Company? "Oh, historic reasons. No university connection now, of course. But sometimes people still ring up from India or Pakistan wanting to know if they can go on one of our study courses."

DOWNTIME

Brightening up the place

READERS will have noticed my scepticism being stretched to previously unknown limits by the wild and wonderful claims made for air ionisers a few weeks ago.

The new departure for the ion boys lies in the housing units for their wonderful devices. Caught up in the wave of enthusiasm for matters organic, biodegradable and ecologic, the boffins have developed a new container for the things which is guaranteed to appeal to trendy environmentalists everywhere: the ioniser is housed in a macrame basket, suspended from the ceiling.

It would be callous to suggest that the device comprised nothing more than an empty box with a mains lead attached and that any perceived improvement in working conditions is purely subjective, so I won't.

But those macramé baskets hanging about the place might cheer things up a bit.

Adding a little colour

PRIME is the latest computer manufacturer to jump on to the colour supplement bandwagon. Once again, readers of the *Observer* magazine have been belaboured with, er, unusual claims.

Prime is seen likening itself to a moth which changes colour to blend in with its surroundings and thus avoid the unwelcome attentions of avian moth-fanciers. This multicoloured moth was originally grey, but changed to black during the industrial revolution when smoke filled the skies of Britain.

Now it appears that the little devils are switching back to grey following the changeover to non-polluting atomic power. Prime appears to consider this ability to change colour with varying smoke levels a jolly good thing.

So at last we know why smoking is forbidden in Prime machine rooms – all it needs is one careless John Player Special and the processor would instantly change colour.

Senders of the most apt caption to this picture will win a signed copy of Computer Weekly.

Watch out, there's a bug about

A BUG seems to be following me around. In the last two weeks of Press assignments I have seen a Barclaycard irretrievably gobbled up at an electronic funds transfer demonstration, a videotex facility refuse to come on (it eventually turned out it was down for maintenance), and a projector give up the ghost at a major conference.

Shades of Uri Geller – I'm now open to commissions to stay away.

A certificate to prove it

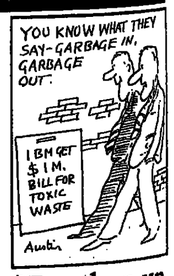
ONE of IBM's recent publicity stunts involved taking a couple of Euro MPs round the company's big installations. In addition, the two lucky MEPs, Derek Enright (Labour, Leeds) and Peter Price (Tory, East Lancashire) went out on site visits with IBM service engineers, and tripped round the country with salesmen.

This valuable Euro time was not wasted, for it is part of the fellowship scheme organised by the Industry and Parliament Trust to promote understanding between industry, the House of Commons and the European Parliament.

After completing 25 days with IBM, Price and Enright were called up by IBM UK managing director Eddie Nixon to receive a glossy certificate to prove they had successfully completed the course.

They were the first Euro MEPs to finish such a stint – a fitting testament to their endurance.

It is good to know we have such sterling fellows sitting for us in Brussels and Strasbourg, is it not?



$7m clean-up

IT is nice to know that GBW, the Great Blue Whale of the computer industry, believes in keeping America tidy. It is one of 22 companies that has volunteered to pay a total $7.7 million to help clear up a hazardous toxic waste dump in Indiana.

IBM's share is $2.2 million (or the $1 million indicated by the cartoonist). The question is: what sort of excrement has IBM dumped over the years? What sort of noxious fumes are given off by the rotting corpses of IBM 360s?

Humbled

EDDIE NIXON, managing director of IBM UK, recently swapped his hat to a lower model. "Morning Leslie," he crowed as a lift operator in front of visiting executives.

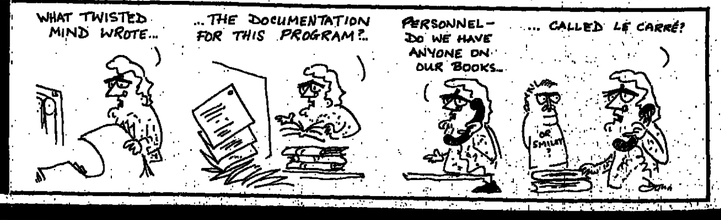
"Name dropper," was the acerbic reply.

I wonder how often the humble are so humbled.

10 YEARS AGO

FROM COMPUTER WEEKLY OF NOVEMBER 23, 1972: The government was urged in the Commons to persuade Harland and Wolff to buy an ICL machine rather than the IBM 370/135 system for which it had placed an order . . . Plessey received an order from the British Post Office worth £1 million for five System 250 processors . . . Heinz Nixdorf announced the takeover of the computer division of Victor Comptometer.

Liveware File by Don



ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, November 25, 1982

The battle for 'free' technology

WHEN a nation's decision making passes from intelligent men and women to intelligence men and women, disaster looms.

There has been much comment recently that Yuri Andropov, the new head of the Soviet Communist Party, is a former head of the Soviet Secret Police, the KGB.

Much less has been made of the fact that George Bush, the man just a heartbeat away from an ageing US President, is an ex-head of the American Central Intelligence Agency.

What the two men share is a profound involvement in a battle over the free availability of technology in the West.

The battle has critical implications for the future of British, and indeed for European, high technology.

President Reagan's ill-conceived and now withdrawn ban on US technology for the Siberian pipeline illustrates how dependent Europe and the UK are on American technology.

The biggest computer company in Europe is IBM, the second biggest is DEC. Both are American companies. Beyond that, up to 70% of all computer equipment in Europe is US built, sourced, or supplied by American companies.

That could be construed as dependence to the point of strategic vulnerability if the US government goes too far to protect its own.

European governments, and particularly the French, have long noted the danger. The government has in a less public way made the same point, by seeking a second and less "political" source for technology in Japan.

In a covert, and increasingly suspect attempt to head off this growing European sensitivity, the American Central Intelligence Agency has taken upon itself the task of reminding the world that the Soviet Union is the enemy.

The free availability of Western, meaning US-based, computer technology, is, according to the CIA, a major source of military assistance to the enemy, Russia.

The CIA's thesis, encapsulated in a report made public in April, is that Russia is so deficient in advanced technology that the KGB now has 20,000 procurement officers in the field illegally procuring US technology.

The report disarmingly overlooks the large number of CIA operatives in the field.

The US, CIA led, is currently attempting to curb Russian efforts to acquire technology in a variety of ways, most of them deeply inimical to the interests of individual European countries, and even more inimical to the interests of American computer companies.

The CIA has recommended that Cocom, the Paris-based body which co-ordinates the release of strategic Western technology to the USSR, should be turned into a huge bureaucracy, complete with unaccountable military committees. The CIA, for less obvious reasons, has prodded the US government away from support for the International Institute for Applied Systems Analysis. But the real scandal, apart from the suggestion that American foreign policy in one area is being driven by the bagmen of an undercover agency, is the alleged means being used by the CIA.

In the case of IIASA it has been suggested that a smear campaign has been conducted by the CIA. Even the Royal Society felt moved to peak out on the issue, with the warning that IIASA can survive its funding crisis, "but not the smear campaign".

Just weeks before crucial announcements about IIASA's funding, there were some inspired leaks about Soviet spying, technically impossible, being conducted from IIASA. (See story back page).

We have resisted the temptation to get overly excited about the current spate of spy stories particularly revolving around the GCHQ intelligence operating centre at Cheltenham. While exciting copy for the nationals, the computer angle has always been a tenuous one. But the more general rumblings being put out that the West's technology secrets are at risk from clever foreign espionage agents does give rise to concern. Let us hope that the current crop of dirty trick stories does not lead to any silly decisions concerning the free availability of computer technology.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by Len Unsworth of Salford, who wins £5.

Science teacher Andrew Gudgeon has programmed a computer to mark homework. Andrew, who teaches in Lytham, Lancashire, says his computer can even add "must try harder", when necessary.

Daily Mail

LETTERS

The Lisp has arrived

IN the article Snag in ICL Move to Expert Systems, by Philip Hunter (CW, November 4), I note the statement that no machine dedicated to Lisp is yet generally available in the UK.

May I make a correction by pointing out that, as previously announced, we at Electronic Associates Limited are the distributors for the Lisp Machines manufactured by Symbolics Inc of Cambridge, Mass, and are currently delivering these processors in Europe.

To date, four Symbolics LM-2 Lisp Machines have been installed by Electronic Associates Limited, two in England and two in France. A total of 45 Symbolics 3600 Lisp machines are allocated for EAL distribution from December this year through 1983, and of these nine are on firm customer order including five in England.

The Lisp Machine *has* arrived in Europe.

CHRIS KENNY
Electronic Associates Ltd, Burgess Hill, West Sussex

Kneeling ops

REFERENCE Downtime, Operators Reduced to a Kneeling Position (CW, October 21), hasn't Chad seen the Wang adverts featuring babies?

Didn't he know? They're the operators.

When you can only crawl you have to have floor level kit. With the average age of programmers being 14, the average age of operators being six months and the unemployment figures proving retirement comes at 16, the operator pictured is obviously past it.

K. GEARY
High Wycombe, Bucks

Don't accept bad law

THE view of former BCS president, Gerry Fisher (CW, October 28) who was reported as saying that the existing data protection legislation should be passed now and then amended later, is positively dangerous.

To argue this view admits at the outset that the legislation is bad, and the way to improve it is through reforming and future legislation. It has taken over 14 years to get a government this far. In which century does Fisher think his reforming legislation will get to the statute?

If the legislation is poor, as the government White Paper certainly suggests it will be, the cry must be "What a load of rubbish". To accept placidly what is offered is to give up before the start. Whatever legislation is proposed is going to have some problems in application.

It is absolutely folly to to accept legislation that is known to be inadequate from the outset.

C. N. M. POUNDER
London N7

Sales to South Africa

L. W. HARDY criticises your article on computer sales to South Africa as being emotive, abusive and uncritical.

I am pleased to say that I get very emotional about the suppression and exploitation of millions of people in South Africa, but I hope that I can still distinguish between fact and fantasy.

Hardy would have us believe that the, yes, "inhuman" pass system can be justified by the almost benevolent administration handing over the excess of income over expenditure on the computerised pass scheme to improve the black homelands.

Come, come – the pass system is there to enforce the regime's oppressive apartheid policies and readers who work for manufacturers and suppliers of computers and peripherals to South Africa should be aware of this.

The categorical statement that the South African Defence Force is not illegally deployed in Namibia is utter bunkum.

The League of Nations, established in 1919, placed Namibia under the control of South Africa which was charged with the task of pursuing Namibian independence on condition that there should be no South African military presence in Namibia. When the United Nations replaced the League of Nations and it became obvious that South Africa was not going to fulfill the requirements of the original mandate, the United Nations, by a series of resolutions and decrees both in the General Assembly and the Security Council, called for the immediate withdrawal of South Africa from Namibia.

South Africa of course did not withdraw and the International Court of Justice was of the opinion that South Africa's presence was illegal.

Meanwhile South Africa continued to earn foreign currency and influence by illegally licensing multinational companies to extract the vast mineral wealth of Namibia.

Just as the plunder of Namibia continues so too will the exploitation and oppression of black South Africans aided in part by the supplies of computers and peripherals but also by the fantasies of readers like L. W. Hardy.

M. G. CHALLIS
Tetbury, Glos.

Hardware failures

DESPITE his assumption to the contrary, I fully support S. S. Hitchcock's stressing of the need for contingency planning and adequate standby arrangements. I quarrel only with his use of misleading statistics to emphasise it.

I was, therefore, disappointed that in his letter (CW, October 21), he chose not to address this issue, but resorted to misquoting my words. I did not say that normal hardware failures were irrelevant, rather that, contrary to the impression created by his comments to John Kavanagh, standby facilities were not a relevant solution to them.

I. D. FOLLETT
Solihull

Excellent

I WAS interested to read your article concerning Lloyds Bank and Cranfield and was slightly surprised at some of Lloyds admissions. As some of your readers know we have had a High Technology Unit for some while and can vouch for the excellence of Cranfield.

IAN DUFFELL
Manager, High Technology Unit
Barclays Bank, London EC4P 4AT

Plus ça change . . .

AFTER reading Alan Francis' letter (CW, November 4) regarding DEC field service departments and their relationship with mushroom management, it is surprising to note that nothing has changed in the last 12 years.

T. R. STANLEICK
Hitchin, Herts

FREE SOFTWARE

Yes, the December issue contains *FREE* games programs on flexidisc for the Spectrum, ZX81 and Vic 20 computers. An article tells you how to transfer the programs from the disc to your computer, thus avoiding the laborious process of keying in listings.
Also in this special Christmas issue:

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2. SECOND AND THIRD GENERATION SPC PABXs – NEW PRODUCTS AND APPLICATIONS
15 February 1983 – London
This conference will examine user experience with advanced voice and non-voice PABX applications, user needs as perceived by both users and suppliers, new SPC PABX products encompassed by second and third generation offerings and future developments in voice switching – including both PABX and LAN approaches.

3. COMPUTER-AIDED DESIGN AND MANUFACTURE
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WORKPLACE

How alcohol can make a fool of your system

COMPUTERS can now synthesise human speech quite accurately, although with the rhythm of a Dalek, and the melody of a tone-deaf parrot. But the converse process of speech recognition has proved elusive in spite of the millions thrown into its research.

Results have so far been patchy and largely restricted to applications involving very small vocabularies and only a few people. There are, for example, several security systems trained to respond to small numbers of passwords, and to recognise the voices of authorised personnel.

But even these are not fool-proof – a dose of alcohol can damage a person's diction enough to make such systems hiccough. And they are dummies in the hands of skilled ventriloquists, who by training their voices can fool most of them most of the time.

The problem is in separating the chaff from the truth. What is a computer to make of the statement: "His mind stinks like a sewer?" Nonsense, probably.

A general speech recognition machine has to be able to identify individual words from a huge vocabulary, when spoken by many different people. It has to be able to cope with different dialects, and the fact that we pronounce the same words with varying stresses and tones, and often mispronounce them.

Another unexpected difficulty has emerged from research conducted at several universities including Oxford and Cambridge: that men and women, although acoustically different creatures, are heard by us as the same (except for the difference of pitch).

The reason is that the human ear, which has evolved in harmony with the voice, filters out the fundamental differences between male and female speech. It was only, therefore, when male and female voices had many times been displayed graphically on spectrograms that the differences became apparent, since we do not notice them (oh, how our senses lie to us!).

The phonetics laboratory at Oxford University is now working on a mathematical model of the human ear that demonstrates these differences. The eventual outcome it is hoped, will, be a decoder to sit in front of a voice recognition machine.

Phonetics is the study of voice production and recognition, and as such is directly relevant to computer research. It is not surprising that the Oxford team, under guidance from phonetics lecturer Anthony Bladon, should be developing several computer applications involving voice production or synthesis.

One of these is a graphical cross-section of the vocal tract that produces the correct movement of the speech organs (tongue, teeth, lips and vocal cords) corresponding to each component of speech. "You can do things like 'how are you' visually," enthuses Bladon.

The model is limited by being only two-dimensional and fails to show the sag of the tongue, or shape of the lips properly. Three-dimensional models of the vocal tract have been developed elsewhere at Bell Laboratories, and at Cambridge University.

The Cambridge model has been used in one of the most successful applications so far of voice recognition – teaching deaf children.

Developed by a team under Frank Fallside, a reader in engineering, the model has been in use five years, and enables deaf children, who cannot hear their elocution errors, to see them instead on a screen.

Fallside explains that the teacher speaks into the system which displays the appropriate movements of the vocal organs. The child then does a trial, and as he approaches perfection, the display gives visual encouragement.

"We use it for training vowel sounds within words," says Fallside. He adds that computer recognition can discriminate between vowel sounds quite accurately now, and it is the consonants, with their vast difference in pronunciation, that present the problems.

The "th" sound, known as a fricative to phoneticists, can either be voiced as in "the" or unvoiced as in "thing", for example.

But back at the Oxford phonetics laboratory, other things are going on. An acoustic machine that produces noises according to specified parameters is being used to build a library of sounds.

To produce an "s" you specify a broad band of noise between seven and ten Hz for example, and then use the keyboard to control the final production.

BLADON . . . Men and women talk differently, but the ear filters this out.

If generated code fails, what then?

YOU will probably have to wait for Christmas to find a week without a conference on program generators somewhere. One result of this glut is that delegates are getting more demanding of them, and are not happy with off-the-shelf answers to their questions.

At the recent conference organised by NCC, the National Computing Centre, one delegate asked simply and reasonably: "What do you do when generated code fails?"

The question was put during the panel session at the end of the day, and one of the speakers replied: "The error can occur at various levels, and if it is at run time, you have to go back to the supplier."

This answer did not seem to satisfy our interrogator. "That's just the answer I expected," he moaned.

Another of the speakers, David James, inventor of The Last One program generator for microcomputers, showed a flash of opportunism, and issued a little public relations piece.

Each week there are 500 Last Ones sold, and only an average of one error reported, he boasted to delegates.

Of the reported errors, only one in ten is the fault of the generator, the rest are flowcharting errors, he said.

James pointed out that The Last One differs from most of its competitors by offering artificial intelligence. When you have given it your ideas, it will examine the logic of the flowchart and ask all the questions it needs until it has a complete picture of exactly what it wants, James assured delegates.

"The Last One is user friendly all the way through except at the first phase when the design has to be specified," he said. But this will come soon when the Last One is replaced by The Real One, which will use what James calls heuristic reasoning.

Heuristic reasoning, says James, will replace the present menus and offer users a comfortable back seat while the system asks probing questions to work out the design.

This is all very well, thought delegates, but just how flexible will The Real One be? Will it enable robotics programs to be written, for example? Or important things like video games?

JAMES . . . The Last One will not last long before being succeeded by The Real One.

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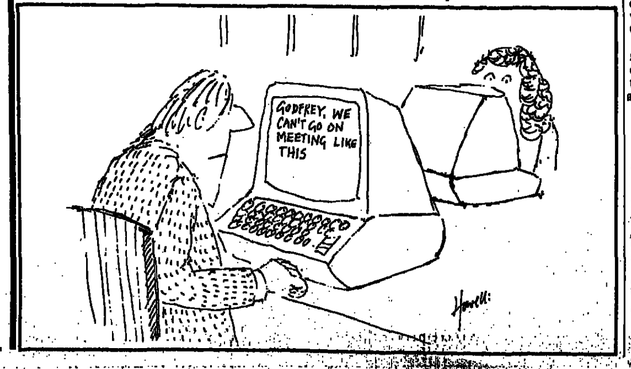
Expensive method of debugging?

"FIND a bug in our software, and £100 is yours," boasts Open Computer Services (OCS), of Brighton, to its customers. A brave move, when the software itself only costs £500, but so far the offer has cost the company nothing since it was made in October.

Perhaps the confidence of OCS springs from the fact that the package concerned lies in the well-ploughed field of payroll and ledger software for microcomputers running the CP/M operating system. Many companies have trodden this field before, and the principles are now so well understood that any programmer worth his porridge could probably write such software in his sleep.

It was suggested to OCS chairman David Everett by someone not too far removed from Computer Weekly that this offer could prove to be just a cheap way of debugging the software. After all, bugs can often take a long time to find.

Everett rightly dismisses such an unkind suggestion, and points to the immaculate quality of the OCS software. "No bug has yet been found, and all we have had are one or two comments about the layout of output, and diagnostics," he says.



Jam yesterday, but not today

AN obvious application for real time computing is in the control of traffic. Suggestions made for such systems range from the practical to the preposterous, and include an idea that cars should have on board computers responding to radio signals transmitted from traffic lights and cameras placed at strategic junctions.

Plessey Controls has come up with something much more practical for Hampshire County Council with a £500,000 Urban Traffic Control Scheme in Southampton.

Like several other systems already installed, the Plessey one controls the timing of traffic lights throughout the city, on main roads and 35 junctions.

Data is collected from over 100 "seismic studs" placed under the road to register each passing vehicle. A central computer then calculates the traffic timing to optimise the traffic flow, and also to respond to particular congestion.

At slack times, it can order the traffic lights to change quickly so that people are not kept waiting unnecessarily. But at peak hours longer timings are usually beneficial, although sometimes it is necessary to penalise one road in favour of others.

Clive Allen, the product manager at Plessey responsible for designing the system, says it is completely interactive and independent of the time of day.

Workplace is compiled by Philip Hunter and Andrew Thomas.

PUZZLER

THE residents of a cul-de-sac are discussing a tender to re-surface the road.

"This amount will require £24 to be levied from each house," says Mr Smith.

"But I shan't use as much road as you," exclaimed Mr Brown, "because I live right next to the main street."

"All right then – you pay £2, the next house £4, the next £6 and so on," replies Smith.

"Yes, and levy £1 on each member of each family down the road," adds Brown.

Using this method of calculation, the residents find that they are still £100 short.

If in fact each family is the same size, how many houses are there in the cul-de-sac? Assume that the buildings are set out one side of the road only, and that only one family lives in each house. See page 19 for solution.

PEOPLE

Amdahl UK names managing director

AMDAHL UK has appointed a new managing director to replace Terry Pasola who has been combining that function with the general management of Amdahl's Northern European region, which includes the UK. He is Brian Little, who returns to this country from Germany where he acted as director of operations in Germany and Switzerland.

Pasola, who remains general manager for Northern Europe, becomes deputy chairman of Amdahl UK.

Little joined the company as a marketing manager in 1978 and immediately before his German appointment in 1981, was manager of sales operations in Belgium and the Netherlands.

Amdahl says the move reflects the "rapid and continuing growth of the company's UK operations."

Little

Pasola

SULLIVAN . . . "On loan" to Commodore for a year.

Commodore asks 'Sir'

PRIMARY school head teacher Graham Sullivan has been granted a year's sabbatical by the Berkshire Education Authority to act as education adviser to Commodore Business Machines. He will advise the company on current educational computing developments. Commodore wants to pinpoint the needs of computer education in schools, and the level of computer awareness in primary and secondary education.

Sullivan's school, Lowbrook Primary, was one of the first to acquire a 32K Commodore Pet. In 1978 Sullivan set up a technology programme and today his school runs four Commodore micros, two disc drives, one printer and one Commodore Vic-20.

Sullivan will take part in computer education workshops, seminars and conferences around the UK and co-operate with the staff of the Micro Electronics Programme (part of the Department of Education and Science), during his time at Commodore. His research will form the basis of Commodore's education marketing plan.

■ **Stephen Mountford** has been appointed UK sales manager at Oric Products International. He joins the company from Rank Xerox, where he was in sales and sales management.

■ Computer Automation's commercial systems division has appointed **Ian Coldwell** as manager of UK distributor sales. He was formerly DP manager with Avis Rent-a-Car.

■ **Greer Calvert** has joined Rediffusion Computers as a software lecturer at the company's education centre in Crawley. He was previously with the Mole Valley District Council for six months.

■ Shipton Communications has appointed **Jim Watts** as sales manager. He was previously with Kardex Systems, where he was a sales executive.

■ **Alan Harper** (below) previously regional sales executive at Terminal Display Systems, TDS, has been appointed sales manager (terminals) at Amexon Communication and Computer Systems.

■ The board of directors of BIS Software has appointed **William Kirby** operations director of the company. He was formerly with Rank Xerox, where he was regional customer services manager.

■ Managing director at Deltak is **Philip Parker**. He previously worked in America, Africa and South East Asia with IBM and Sperry Univac in international finance and marketing.

■ MSS International has named **Peter Evans** managing director. He was previously marketing director at Data Logic.

■ New systems consultant at MSA is **Ian Dick**, who joins the company from Freeman Fox and Partners where he was cost/project accountant.

■ Agrochemical company FBC has appointed **Robert Oscroft** (below) as data centre manager. He will be responsible for the operation of a new VAX computer to be installed by the end of the year. He was formerly systems manager at Woolstons and Blunts.

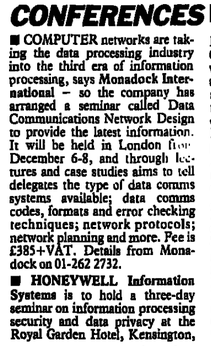
Harper

Oscroft

■ **Roger Barnes** has joined RTZ Computer Services from Software Design Associates as AP Plus product manager.

■ Access Data Communications has appointed **Jamie Gryce** to the newly created post of field sales manager. He joined the company's salesforce just over two years ago from Anderson Jacobsen. **David Brown** has joined the company from Data Dynamics, where he was UK service manager, to take on the same position at Access Data Communications' Uxbridge service centre.

■ Marketing manager at British Olivetti is **Don Wilson**, formerly a director of SPL International. In 1981, he was president of the Tandem European User Group and he has served on the Council of the Computing Services Association for the past three years.



Delaney

■ Newbury Data's administration secretary Marina Delaney (above), has been promoted to sales executive responsible for end-user sales of the company's VDUs, matrix printers and microcomputers in Surrey, Hants and Sussex.

Brooking

■ **Annie Brooking** (above) has been appointed head of the Knowledge-Based System Centre recently set up at the Polytechnic of the South Bank in London. The centre will research appli...ations in the area of artificial intelligence and knowledge-based engineering and has already received support from a Japanese company involved in that country's fifth generation computer project. Brooking is a former lecturer in computer studies at the South Bank Polytechnic.

■ DISC (Debenhams Interactive Systems Company), formed at the beginning of this year, has strengthened its management team at the Somerset headquarters. **Martyn Goodman**, who joins as finance director, was formerly with Logica; **David Kauders**, previously with Deloitte, Haskins and Sells, becomes planning manager; **Andy Breckon** joins from Hoskyns to manage Disc's data centre; **Brian Hume** becomes systems manager, having joined from Scicon; and **Murray Cooke**, who formerly worked with Prestel, has been appointed viewdata development manager.

CONFERENCES

■ COMPUTER networks are taking the data processing industry into the third era of information processing, says Monadock International – so the company has arranged a seminar called Data Communications Network Design to provide the latest information. It will be held in London from December 6-8, and through lectures and case studies aims to tell delegates the type of data comms systems available; data comms codes, formats and error checking techniques; network protocols; network planning and more. Fee is £385+VAT. Details from Monadock on 01-262 2732.

■ **HONEYWELL Information Systems** is to hold a three-day seminar on information processing security and data privacy at the Royal Garden Hotel, Kensington, London from December 13-15. Called Security, the event will review potential risks; look at legal aspects of security; and cover file and data security, access control to the system, and back-up and recovery services. Details from David Wilkin on 01-568 9191.

■ SCIENCE Fiction writer Isaac Asimov is the keynote speaker at the HP 3000 International Users Group Conference to be held in Montreal from April 24-29, 1983. He will offer his own perspective on robotics and cybernetics. Systems designed with users in mind will be the theme of the conference. Further information from Renaye Lee, conference manager, HP 3000 IUG, 289 South San Antonio Road, Suite 205, Los Altos, California, US. Tel: (415) 941-9960.

DIARY

NOVEMBER 30
Prolog and Expert systems. BCS South-west branch. Lecture Theatre 5, Plymouth Polytechnic.

DECEMBER 1
Unions in DP – is there a place for them? IDPM Central London Branch. Altergo, Imperial House, 15-19 Kingsway, London WC2. 6.00.

Head-hunting in DP – DPMs: Where do you go now, and how do you get there? IDPM Sussex branch. British Caledonian Headquarters, Caledonian House, Betts Way, Crawley.

DECEMBER 2
Introduction to computing in a technical environment. BCS Hampshire branch. Mountbatten Theatre, Southampton. 2.00.

DECEMBER 3-4
Silver Jubilee Computer Fair. BCS Wolverhampton, supported by ITEC. Details from S. Percival on (0902) 27371.

DECEMBER 7
Social evening. Visit to Thames Television, Teddington, followed by wine and cheese party. BCS Kingston branch. Tickets from branch secretary.

The Multi-purpose workstation. IDPM Birmingham branch. New Imperial Hotel, Temple Street, Birmingham. 7.30.

Value for money audit in the computer field. BCS Auditing by Computer Group. Peat, Marwick Mitchell Offices, 1 Puddle Dock, Blackfriars, London EC4. 4.30.

DECEMBER 8
Data analysis: Normalisation and charting. BCS Birmingham branch. Royal Angus Hotel, St Chad's Circus, Birmingham. 6.30.

The role of business games on microcomputers. BCS Bristol branch. St Vincent's Rocks Hotel, Clifton. 7.15.

DECEMBER 9
Annual general meeting. Association of Field Service Managers. Skyway Hotel, Hayes. 10.30. Details Paul Newnham 01-560 0700.

DECEMBER 13
Programming – A cottage industry, by Steve Shirley, founder of F International. BCS Bedfordshire branch. Crest Motel, Luton. 7.30.

DECEMBER 14
Local area networks. BCS Word Processing and Office Automation Specialist Group. Board Room, London School of Economics, Houghton Street, London WC2.

Application forms from L. Wright, treasurer, WP & Office Automation Specialist Group, 101 New Street Hill, Sundridge Park, Bromley, Kent.

Information Technology Year, by Ken Barnes, project director of ITSA. Honeywell, Maple Room, Fairfield Halls, Croydon. Admission free. 7.15.

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BOOKS

Computer pioneer had to struggle for recognition

Charles Babbage, Pioneer of the Computer. Anthony Hyman. Oxford University Press. £12.50.

BORN in 1791, Charles Babbage lived more than a century before his time and as a result spent most of his life struggling for recognition of his advanced ideas.

Primarily a mathematician, he was already ahead of his tutors when he arrived at Trinity College, Cambridge, and this started him off on a crusade to reform the nineteenth-century attitude to science and its teaching.

While still at Cambridge, he founded the Analytical Society to reform mathematics, and later joined forces with the astronomer John Herschel to attack policies and activities of the Royal Society, writing a book called Reflections on the Decline of Science in England as a vehicle for his criticism.

The idea of calculating by machinery occurred to Babbage in about 1820, when the Astronomical Society asked him to prepare sets of tables. Herschel produced one set and Babbage another, but on comparison they proved to have many discrepancies, and this led Babbage to wonder whether they might have been more efficiently produced by steam power.

From this idea grew the Difference Engine plan and, after constructing a preliminary model with six-toothed wheels for storing digits to check that the idea was feasible, Babbage proposed its construction in an open letter to the president of the Royal Society, Sir Humphry Davy.

The rest of the story is a familiar one to many companies or individuals seeking government funding for high technology development today. Money was promised, but not forthcoming, and Babbage was left to fund most of his research himself from a modest private income.

Invited to stand for the North London constituency of Finsbury in 1832, one passage of his election speech could have been written for IT82, so similar is its philosophy. In his speech he maintained that Britain could only hope to keep ahead of other nations by diffusing the knowledge gained through advances in manufacturing.

Anthony Hyman's picture of Babbage explodes the image of an academic hermit poring over his inventions by day and night. Babbage numbered among his friends the Duke of Wellington, Charles Darwin, Lord Shaftesbury, the Brunels and William Henry Fox Talbot.

He was also an inspired inventor suggesting new techniques in stage lighting, designing a punch card for input to the Analytical Engine he never actually built, and nearly drowned in his youth while experimenting with water skis.

This is a fascinating book which gives sympathetic insight into the life of a brilliant man who, though thwarted by official bodies, still managed to complete an amazing amount of scientific work and statistical analysis.

It is not by any means a book about the first computer, but gives a very readable account of the inspiration, skill and sacrifice of the man whose dream was to build it.

Maggie McLening

A useful systems workbook

Advances in Information Systems Science: Volume 8. Edited by Julius T. Tono. Plenum Publishing Co. £42.50.

THIS is, without doubt, a thoroughly useful systems workbook. The only daunting aspect is the price. At £42.50 it's strictly for the library or corporate budget. That said, what's the appeal?

In my time as a systems analyst there were always two rebarbative aspects to the work: the first was working with tools from the last decade; the second was finding out, easily, quickly and in readily usable form, those advances which had recently occurred and which would be swiftly put to use.

This volume, the eighth in a series which has maintained both consistency and style throughout, includes major sections on file organisation and performance, software development for digital control and clustering analysis of data and its applications.

From a working analyst's point of view, the survey on file organisation is a clearly laid out guide to the principal recent developments in this field. The presentation is clear, lucid and compares the relative applications and uses of various file forms, including the four key structures of sequential organisation, direct organisation, indexed sequential organisation, and index tree structures.

Consideration and comment a the key structures is followed b further sections on the princip secondary file organisations.

The final section of the boo dealing with geometric model and its applications in mechani design and production, an are which is becoming increasingl important in many industrial or nisations, is one of the better the introductions around.

A book recommended to a worker in information science w is interested in keeping abreast the field, in order to do his j better.

Kevin Cole

This Cobol feature often neglected

Structured Cobol Report Writer – A Programmer's Productivity Tool. Schechter & Yvkoff. Reston (Prentice Hall). £18.70.

THE case for using the Cobol Report Writer is advocated by the authors giving as evidence the production of efficient, maintainable, self-documenting programs.

The book is aimed at Cobol programmers and their managers, particularly in IBM/370 environments. It covers an often neglected and optional feature of Cobol which is not present in all implementations.

Many example programs are developed in the text and claim to illustrate a structured programming approach and good style. After an introductory chapter, the second chapter aims to dispel some myths associated with the report writer and illustrates its use in the generation of a normal report.

The main body of the book is then divided into three parts: f first examining the elements o port writer features; the seco advanced features; and the fi including a comparison of the 19 and 1974 standards in the area a guide to introducing the use the report writer in practice.

A. J. Pow
Acting Dean of the Faculty Science, Wolverhampton Poly nic.

Info security plan will be useful to the DPM

Managing Information Security – A Programme for the Electronic Information Age. James A. Schweitzer. Butterworth. 133pp. £12.

DATA protection has been the subject of a debate in the UK since the early Seventies. Despite the recommendations of Professor Lindop and his team, the government is insistent on a low-budget, low priority treatment of the matter – some day.

In the meantime, the DP manager is left to decide for himself what level of protection to give his users' data.

Schweitzer's book should prove useful to managers contemplating the development of a total information protection scheme. The emphasis is very much on information security, rather than the physical security of the computer hardware.

The author develops his information security model using a three-dimensional matrix of computer user groups, levels of management directive, and levels of protection.

The five user group areas are business systems analysis and programming, research and engineering/personal computing, office automation, data processing and telecommunications operations, and time sharing/distributed puting.

After establishing a "value b tor" structure for different typ information, Schweitzer lays four rules of information sec

The absolute necessity of porate security programme bac by a definitive statement of p is stressed, and detailed exa directives given.

Schweitzer has little time risk analysis, which he consi an expensive exercise not jus ing its cost. Instead, he advo the value factor system as more effective in providing se ity.

The information protection p gramme described in the book developed and implemented Schweitzer in his capacity systems technology security ma ager for the Xerox Corporat The only real fault is the auth writing style, which is generall rather stodgy.

Nevertheless, Managing I formation Security is a welcom addition to the bookshelf of th DPM: particularly one concerne with the security implications in herent in the spread of microco puters and office automation.

Alan Stewart
Assistant Computer Manager, Barking and Dagenham Council.

James Martin below his best on viewdata

Viewdata and the Information Society. James Martin. Prentice Hall International. £23.95.

JAMES Martin possesses three of the best characteristics which typify Americans: he is an enthusiast, he is entertaining and he is a good presenter of complex technical material, particularly in terms of its likely effects on society.

In addition, Martin has been disconcertingly right in his prediction about technical product innovation. As early as 1968 he was saying that in 10 years computers would be experiencing a hobbyist boom. He was right.

His latest work on the two-way interactive system which he calls viewdata, and which will form the basis of the information society, comes at a time when the market is flooded with books on the topic.

One needs to look, gimlet-eyed as the Irish say, at apparent gift horses costing £23.95. Especially when they come without an index, implying that the reader is unde the thumb of the writer's inspir tive to read, or else.

So what do we get?

Not much that isn't in Ala Mayne's excellent book on th Videotex Revolution, and a grea deal less than logically organise material, for easy comprehension by, say, a person in the computer industry who has day by day fam liarity with the topic.

There are far too many tables o lists, which "might" appear in a viewdata index. There are far too many pages with two only peripherally relevant photographs o them. The text, where it occurs, is light and banal.

Not the best of James Martin.

Not even good enough to recommend to your friends outside the industry as a way of learning about viewdata, unless you are rich enough not to notice £p less than £24 crossing the counter.

K.C.

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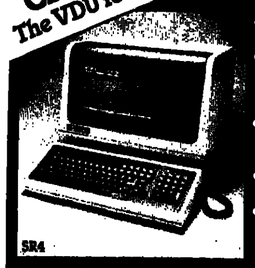

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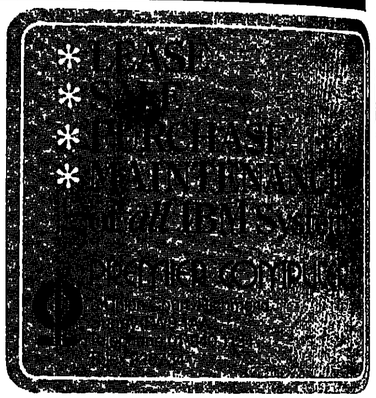

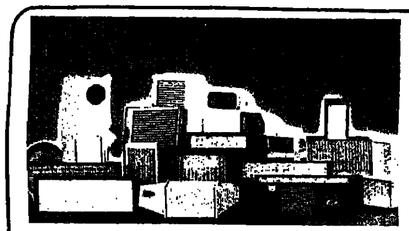

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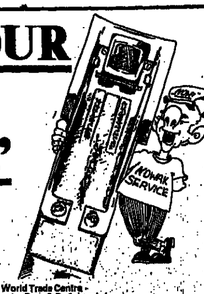

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The current hardware configuration comprises 3 X IBM 4341's, providing a real-time system under VM/370, DOS/VSE POWER/VSE and making extensive use of CICS/VS. The operation supports a network of over 450 VDUs and teleprinters, which will continue to expand as more terminals are installed in clients' premises. Racal Milgo 4800 bps modems are used extensively throughout the network, and ITT 3809 front-end processors have recently been installed. Network Management Systems are being evaluated to incorporate current, and provide additional, diagnostic capability.

The recent expansion of network services has created a vacancy for a bright, young operations professional to join an experienced network team. Candidates will have spent at least two years working in a large IBM installation and should demonstrate a sound knowledge of DOS/VSE and CICS/VS. This opportunity is ideal for those anxious to work in a progressive, large machine environment, but who currently feel they are unable to progress. ICCH provides excellent training facilities and is committed to promotion from within based on an individual's ability.

A two shift system is in operation. Fringe benefits include Non-Contributory Pension Scheme, Staff Loans, Subsidised Lunch Facilities, Interest Free Loans for Season Tickets, Four Weeks Holiday, Sports and Social Club, and later you may qualify for a Mortgage Subsidy. London based.

Contact Ref MT/700 for further details and immediate appointment for interview.

ICCH

Analyst/ Programmer

SYSTEM 38/RPGIII

Herts-to £10,000

One of the youngest and fastest growing life insurance companies in Britain is currently looking for a dynamic, young Analyst/ Programmer to join a small specialist team. Based in rural Hertfordshire, this company offers an opportunity normally only associated with the City of London.

You will be expected to play an important part in the future development and implementation of both internal and client related systems. This will obviously involve a certain amount of familiarisation with existing systems, as well as discussion with users regarding future systems requirements.

You will have a young approach and have had at least 18 months experience in an analytical role with a sound programming background within an IBM GSD environment, using RPG 2/3. Previous life insurance system experience would be an obvious advantage, however, the company is prepared to train a suitable successful and dynamic young Analyst/ Programmer who has the right approach.

Salary will be negotiable up to £10,000 and will include all the normal benefits of the insurance industry, including free lunches.

Contact Ref YY106 for further details and an immediate appointment for interview.

General Portfolio
Life Insurance Company Limited

Sales Executive

to £12,000+Commission +Car

MicroProducts Software Limited (MPSL) is a dynamic, young Software company specialising in the creation, manufacture and distribution of Business and Programming Software based on BOS, the unique computer-independent operating system.

Within the mini/micro market, the state of the art technology is advancing at an unprecedented rate. This has created a fast moving and exciting business environment and with BOS already available for over 50 computers, the company is committed to continual enhancement of the software and to implementing it on new computers.

At the heart of MPSL's business success is a talented marketing team responsible for selling BOS software to users via a potentially huge and constantly expanding network of dealerships and distributors of hardware. Crucial to successful sales is a first-class back-up operation incorporating an experienced technical support group and highly-tuned administrative systems.

In order to maintain their leading position, MPSL wishes to recruit an additional Sales Professional.

Candidates, with good academic qualifications, will be in age range 23-28 and possess at least 2 years direct sales experience within any sector of the computing industry. Confidence is a key factor as the successful applicant will be expected to quickly become familiar with the product and be able to accept full sales responsibility immediately.

With a basic salary to £12,000 coupled with an attractive commission scheme the earnings potential is excellent. Additional benefits include CAR (good choice), 4 Weeks Holiday, Pension Scheme and Profit Share. London based.

This is a tremendous opportunity for an ambitious young man or woman to sell in the RIGHT market at exactly the RIGHT time. Contact REF: YY/105 for further details and immediate appointment for interview.

MPSL
MicroProducts Software Limited

Knight

Recruitment
14 Old Park Lane, London W1Y 4NL
A member of the Computing Services Association

Licensed as an Employment Agency.

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Shuter Smith bring you the best opportunities on the Continent

THE EXCITEMENT OF WORKING ABROAD COULD BE YOURS

If you have never worked outside the U.K., or even if you have, you may not realise how much your skills will be appreciated in Europe. A job on the continent will provide you with a unique challenge and a whole new world of experience, excitement and an improvement in your life-style as well as enhancing your career prospects. As our international clients are offering extremely attractive salaries and benefits packages — why settle for less?

Our client is a highly successful multi-national company with a positive future commitment to data processing into the 1980s. As a result of their continued growth, the following career openings exist:

PROJECT LEADER ***BRUSSELS***
(Order Tracking System)
Excellent salary and full relocation package.
As a proven systems analyst, you will have already worked at a senior level on large projects. This is a major project and the company attaches strong importance to its development.
You will have:
– a background in large systems, pref. IBM
– proven skills in systems design and program spec. writing
– all-round commercial awareness.
You will be:
– an effective communicator
– capable of co-ordinating a small team
– willing to travel.
Success in this role will provide the perfect platform for further career progress. Ref: CW/E/1

SENIOR SYSTEMS ANALYSTS
You are currently working as a systems analyst with 5+ years on major projects behind you. Your experience will have been gained within a large systems environment, preferably IBM and/or Burroughs and you will have a good understanding of cost accounting and/or manufacturing applications. You will be able to write program specs., have a good knowledge of Cobol and be able to communicate effectively at all levels. A willingness to travel is essential. Ref: CW/E/2
These are superb career opportunities with a company who fully recognise the contribution made by the dp function to the continued success of their business.

TELECOMMUNICATIONS ANALYSTS
BRUSSELS BASED
Salary to £18,000 p.a. + substantial tax benefits and full relocation.
Our client is a prestige financial organisation with its international headquarters in Brussels. They are seeking 2 highly competent engineers/technicians, aged 27 to 35, to work as analysts on a wide range of interesting and challenging telecomms. projects. You should have all or some of the following knowledge:
– data, voice and message areas
– word processing/facsimile
– local area networks/digital exchanges
– time division/encryption/statistical multiplexing
– PTT and CCITT regulations and recommendations
High standards of professionalism together with effective personal skills are considered essential. Candidates should be willing to travel. Ref: CW/E/3.

A world leader in the energy field is currently seeking the following specialists to work from both their European data centre and their UK office.

IMS DATABASE ADMINISTRATOR
UK/BELGIUM
£20,000 + substantial tax benefits/relocation package. Based at the company's UK office, you will spend up to 50% of your time at their European data centre situated in one of Europe's most impressive and attractive cities.
Your prime responsibilities will include:
– management of IMS system performance
– database integrity and structure
– data dictionary control and admin.
– IMS operational aid design and implementation
– co-ordination with application programming groups
This is a particularly interesting and important position offering a high-visibility role within the company. Ref: CW/E/4.

SYSTEMS PROGRAMMER – IMS
£15,000 + p.a. + substantial tax benefits/relocation package. A highly proficient technician is required to work at the company's European data centre. With an in-depth knowledge of IMS/MVS/JES2/VTAM your responsibilities will, amongst others, include:
– software maintenance – database troubleshooting
– liaison with database administrator
– technical consultancy Ref: CW/E/5

MICRO/SOFTWARE SPECIALISTS
HOLLAND/WEST GERMANY
A number of opportunities exist for people at both analyst/programmer and team leader level. Experience in any or all of the following areas:
– real time systems
– Zilog/PDP-RSX11/INTEL 8080/Motorola
– Hewlett Packard – Philips equipment
– MASCOT/RTL2/Pascal/Assembler languages
Candidates who have worked within private or military networks or a process control environment will be of particular interest as will some knowledge of hardware design.
These are permanent positions offering genuine career progression. Ref: CW/E/6

A reputable worldwide organisation engaged in an advanced telecommunications project are seeking the following specialists:

SOFTWARE MANAGERS ***BRUSSELS***
With experience in one or more of the following areas:
– large scale programming developments
– software project planning
– software systems design
– configuration management
– systems test design
– systems programming specifically for library control systems
Candidates should have a degree in maths, electrical/electronic engineering or computer science. Management skills and a willingness to travel are essential. Ref: CW/E/7

TOP LEVEL DESIGNERS ***BRUSSELS***
With 5+ years' experience in any or all of the following areas:
– package switching/call handling
– PABX architecture
– micro-processor/logic and circuit design
– local exchange applications
An excellent remuneration and benefits package is offered for these positions and career development prospects within this Company are exceptional. Ref. CW/E/8

If you are considering an overseas move and have not seen a position to match your skills on this page, please call us anyway. We can probably help you.

CLIENT ENQUIRIES WELCOME

If you have genuine motivation and desire to take up the overseas challenge and are seeking either a permanent or contract position, telephone Ray Parker or Robin Shuter on 01-491 4653 for an informal discussion about the benefits of working on the continent, or send us your curriculum vitae. (Up to 8 p.m. Thurs/Fri/Mon.)
(1723)

Shuter Smith International
28, Berkeley Square, London, W1. **Tel 01-491 4653**
Part of Shuter Smith Associates

Telex 268312 Wescom G/Atten Shu Smith.

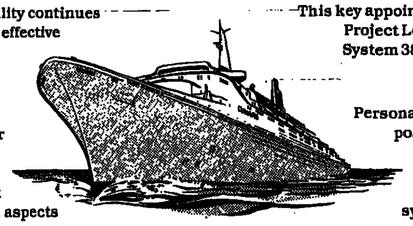
Systems Manager

Southampton – New York – Systems 38

CUNARD, a name synonymous with all that is best in International Cruising and cargo shipping, is embarking on a new voyage of discovery.

Their international passenger and freight capability continues to expand, and in order to maintain efficient and effective resourcing, and management and financial controls, Cunard have committed to a radical new Systems Development plan.

This plan will ultimately utilise both IBM 4300 and System 38 facilities, but it is within the latter area that the need for a Systems Manager arises. The successful candidate will take responsibility for the control of the development of a totally integrated system which will cover all aspects of Cunard's activity both on-shore and afloat.



This key appointment calls for an individual with well proven Project Leadership and management skills, gained in a System 38 environment, and hopefully with experience related to the shipping, travel or cargo/freight handling industries.

Personal skills will also play an important role in this post, as the Systems Manager will be required to liaise closely with Cunard personnel on both sides of the Atlantic, as well as at sea, within the development and installation of systems at Southampton, New York and aboard fleet vessels worldwide.

A high, negotiable five figure salary will be offered to the successful candidate, and where with the addition of a company car, other benefits and full relocation, the remuneration package will reflect the status of this post within an Internationally prestigious organisation.

To arrange an initial interview please call **Steve Stark** on **01-935 0671** during working hours, or 01-804 7662 during the evening and at weekends.

(1778)

Technical, Sales & Management Appointments

Specialist Computer Recruitment Ltd

SOUTH	MIDLANDS & INTERNATIONAL	NORTH	BELGIUM	HOLLAND
James House, 46 James Street, London W1M 5HS	35-37 Great Charles Street, Queensway, Birmingham B3 3JY	International House, 84 Deansgate, Manchester M3 2ER	Avenue Louise 327, Boite 4, 1050 Bruxelles	Willemsparkweg 92, 1071 H.M Amsterdam
01-935 0671/486 0461	021-236 3781	061-833 0427	010 322-640 7151/71	010 3120-760947

Senior Programmers, Analysts and Programmers

Develop your career with one of the biggest computer users in Europe

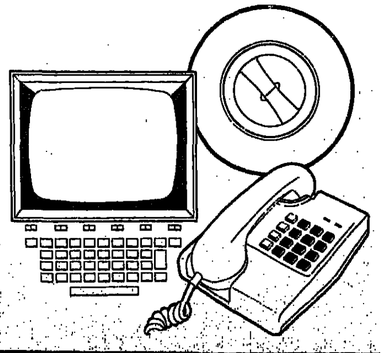
Starting salaries up to £12,795

British Telecom is in the forefront of the computer world, and with 40 large computers in support of highly competitive and developing operations, we are one of the biggest computer users in Europe today. Our massive computer capability is based on IBM 370, IBM 3033, ICL System 4 and ICL 2900, plus hundreds of *mini and micro computers including IBM 4331* and the latest in peripheral equipment.

Current opportunities.
We have a number of first-rate opportunities in programming and systems teams in the London area, Cardiff and Ipswich.

Across-the-board activities.
Our work covers all British Telecom activity – including Prestel, System X, Yellow Pages – with major emphasis on applications development. Experience of COBOL, USERCODE or ASSEMBLER is essential, gained on ICL or IBM mainframes or minis. Experience of IDMS under VME/B, DOS/VSE, database administration and design and transaction processing would be an advantage.

Specific Appointments.
Opportunities exist at two levels. For Senior Programmer/Analyst posts, you should normally have a degree (or equivalent), plus at least 3 years relevant experience, preferably with a period in a supervisory capacity. For Programmer/Junior Analyst posts, you need at least 2 'A' levels (or equivalent), plus 18 months relevant experience. Some trainee posts may also be available for inexperienced but otherwise qualified applicants.



Salaries and benefits.
Depending on the level you join us, starting salary will be up to £11,580 – rising to £13,991; or up to £9,584 – rising to £11,986. (An additional allowance of £1,215 p.a. is added to Inner London postings.) Benefits include flexible working hours; up to 4 weeks 2 days holiday a year on starting; contributory pension scheme – and there are excellent prospects for promotion.

For further information and an application form, telephone Brian Foster in Cardiff on (0222) 490938 (reversing the charges); or write to him at British Telecom, Data Processing Executive, Room 303, Brunel House, 2 Fitzalan Road, Cardiff CF2 1YA.

(1800)

British TELECOM
Data Processing Executive

logistix

Logistix Recruitment Limited

10 Grenville Place, London SW7 4RW

Telephone 01-373 3063

UNIX Programmers

South Coast : Salaries to £10.5K

An internationally recognised Communications Equipment Supplier is *currently seeking a number of* **UNIX Programmers** for its technical software division on the South Coast. Suitable applicants should have at least two years' software development experience gained within a microprocessor-based environment. It is anticipated that you will offer fluency in at least one high level language with C or PASCAL being the most desirable. Of course an in-depth knowledge of the utilities offered by UNIX is essential. Working as a member of a multi-disciplinary team you will be involved in various applications which will include Telex, LANs, Packet Switching and public/private networks.
Ref. L/47/A

Firmware Programmers

Thames Valley : Salaries to £11K

A small but rapidly expanding company has a number of vacancies for **Firmware Programmers/Designers** to join its product development group. Acting as the external development department for many of the leading names in the industry, the company is able to offer a wide range of hardware and software involvement. Suitable applicants will be graduates with a B.Sc. or M.Sc. in Electronic Engineering or Computer Science. It is essential that you offer fluency in Micro Assembler with additional knowledge of a block structured language such as Pascal or "C", being desirable. Mostly based in-house you will be involved in the development of intelligent terminals, data capture equipment, multi-micro communications processors or ATE software.
Ref. L/47/B

Micro Software

Central London : Salaries to £7.5K

A number of challenging opportunities have arisen with London-based Software Houses and Total Systems Suppliers for **Applications** and **Software Programmers** who graduated in 1981 or 1982. Generally you should have a first or second class honours degree in Computer Sciences, Electronics or Mathematics. Those who have completed a "thick" or "thin" Sandwich course and can offer a minimum of six months' programming experience with a commercial organisation are particularly encouraged to apply. Fluency in PASCAL or a Micro Assembler (and in some cases C under UNIX) is an advantage. Your academic project should have been biased towards financial development, interactive systems, networking or robotics/artificial intelligence.
Ref. L/47/C

Process Control Software

E. Home Counties : Salaries to £12K

A major supplier of micro-based industrial control systems has a number of vacancies for **Senior Systems Engineers** with around five years' software design experience, gained in a distributed processing environment. Applicants should possess at least one degree and be fluent in an Assembler and either "C" or Pascal. There is a strong preference for candidates with development experience on a Z80 or T.I.9900 based system, although applications are also sought from those with hands-on experience of any leading MDS. Excellent communications skills and the ability to clearly formulate product and system needs as well as project management abilities are highly desirable.
Ref. L/47/D

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Real-Time Programmers

Netherlands : Salary to £15K

A leading International Systems House and Turnkey Supplier is *seeking to recruit a number of* **Software Programmers** and **Systems Engineers** for permanent career positions commencing in January or February, 1983. Suitable candidates should hold at least one numerate degree and have two years' software programming or systems engineering experience in an industrial environment. Candidates who have programmed in one or more of the following languages will be of special interest: MACRO 11, PASCAL, 'C', PL/M or CORAL. Hardware experience is less important but those who are currently in a development role on PDP-11/VAX, Argus, Intel 8086/Motorola 6800/68000 will attract a salary premium. Preliminary interviews will take place in our offices after which short-listed candidates will be invited to the Netherlands.
Ref. L/47/E

Robotics Software

Home Counties : Salaries to £12K

A manufacturer of Robots and Industrial Automation products has a number of opportunities for **Software Development Engineers** to join its Research and Development facility. All candidates must offer a minimum of B.Sc. degree, preferably Electronics or Computer Science. Preference is likely to be given to those who have post first degree experience either within academia (M.Sc. or Ph.D.) or industry. All candidates should demonstrate an appreciation of the theory of robotics techaology and also have a real desire to participate in the *utilisation of robots within a mass production environment.* You should have had previous exposure within one or more of the following specific areas: artificial intelligence, laser scanning, speech synthesis and image processing (object and shape recognition). Candidates should also possess good personal communication skills since there will be a certain amount of client demonstrations both in-house and on-site.
Ref. L/47/F

Simulation Engrs.

Thames Valley : Salary to £12K

A long-established Engineering Systems Supplier based in the Thames Valley has an immediate requirement for additional FORTRAN Programmers and Simulation Engineers. You should hold at least one numerate degree and be aged 23-30 years. Whilst the Company's software products are machine portable there is some preference for candidates who have programmed in a PDP/VAX, Prime, HP or GEC environment. Of greater importance are those who have very recent or current software design and applications programming experience with one or more of: guided weapons and missile control systems, LSI and hybrid circuit design, simulation and modelling of ballistic/dynamic systems.
Ref. L/47/G

Compiler Development

London & H. Counties : Salaries to £14K

A major Systems and Software House has recently embarked on a large new project requiring the expertise of a number of **Compiler Development Specialists.** Suitable candidates will have participated in the development of either a Pascal or Ada compiler, preferably for 16-bit micros. Familiarity with all phases of compiler development is strongly desirable with particular emphasis placed on Code Generation and Optimisation. Whilst specific responsibilities will vary, depending on the ability and experience offered, all successful candidates will be involved from initial proposal stages through to the creation of a fully self-supporting compiler.
Ref. L/47/H

Software Designers

Swindon : Salaries to £15K

The Swindon-based Research and Development facility of an international Systems Supplier currently requires a number of **Software Designers and Project Leaders.** Suitable applicants will be numerate graduates with a minimum of three years' software development experience in a microprocessor-based environment. Ideally you will have current or very recent experience in the design and development of a distributed electronic office system or a communications network. Of particular interest will be applicants who have gained software design expertise with multi-station word processors, personal computers (in an interactive mode) and/or Local Area Networks. Working in a dynamic environment you will be utilising the latest software techniques and opportunities for career advancement will be excellent.
Ref. L/47/I

Systems Architects

N. Home Counties : Pkg. to £16K

A highly profitable computer manufacturer has a most interesting and unusual opportunity within its Development Department. To assist in the development of their new generation of machines they require a **Senior Systems Software Engineer,** with a minimum of seven years' compiler development experience. Familiarity with a number of block-structured languages is desirable, as is knowledge of multi-processing systems. Specific responsibilities will include the definition, implementation and maintenance of Systems Software; the development of a strategy for coping with applications languages in a multi-processor environment and the co-ordination of the activities of a number of project teams. Whilst extremely demanding, this position offers the successful candidate the opportunity to spearhead totally new developments in the field of Systems Architecture.
Ref. L/47/J

Comms. Consultants

Inner London : Salaries to £20K + Car

A highly regarded Consultancy having its Headquarters in the City is seeking several **Senior Communications and Strategy Consultants.** Ideal applicants should be aged 28-35 years and be educated to at least B.A. or B.Sc. standard. You will be expected to have a thorough knowledge of at least two of the following: office automation systems and networking; data or voice communications; systems analysis, design and systems management (IBM orientated); market and product planning to include both surveys and the assessment of market requirements. Good personal communication skills are of paramount importance since you will be expected to make presentations at board level and to prepare reports and recommendations to exacting deadlines without supervision. Fluency in a foreign language, specially French or German, is a welcome asset. You must be prepared to travel both nationally and internationally.
Ref. L/47/K

Pascal Programmers

Home Counties : Salaries to £10K

The Research and Development division of a leading multi-national corporation requires a number of **Programmers** to assist in the development of both Applications and Systems Software. All respondents should possess a degree or H.N.C. in a relevant discipline followed by at least two years in industry. A minimum of one year's development experience on either Intel 8080/5 or Z80 based systems, preferably running under CP/M or UNIX is essential as is fluency in Pascal. A knowledge of protocolling techniques and an Assembler language are useful supplementary skills and will attract a salary premium.
Ref. L/47/L

Systems Software

Herts./Beds. : Salaries to £14K

The Communications and Networking Division of a leading Turnkey System Supplier has a number of outstanding career opportunities for **Software Engineers and Programmers** within its recently established research and development facility. All candidates must be educated to B.Sc. or H.N.C. standard and have subsequent commercial/industrial experience amounting to three years. Of interest to the Company will be those who have software and systems design experience with a packet switching or networking product and in particular of communications protocolling techniques – X-25, SDLC/HDLC. Certain positions will be exclusively in-house based whilst others will entail a support role. A salary premium will be paid to those who have participated in the enhancement or optimisation of a UNIX or UNIX look-alike operating system.
Ref. L/47/M

(1752)

Contractors

UNIVAC 1100 PROGRAMMERS

We have forthcoming requirements for UNIVAC 1100 COBOL Programmers at five sites
TIP, DMS useful but not essential for all jobs
Long term contracts
December or January starts
Contact Roger Radford or Richard Jones on 021-643 4700
Telex: 337045

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(1793)

LONDON AND THE SOUTH

SOFTWARE SALES

THE COMPANY
DAYA SCIENCES INTERNATIONAL LTD is a successful and well-established computer *services company* with over 20 years' experience of selling Commercial Business Systems.

THE JOB
An exciting and challenging opportunity exists for sales of Real-time Commercial Applications Software to all medium and large ICL computer installations in the South of England and London.

THE PERSON
A successful background of Computer System Sales is necessary, along with a good general knowledge of both Commercial Business Systems and the current range of ICL computers.

ACTION
Forward-thinking people who know they have the right background, aptitude, attitude and determination to reap high rewards, should telephone or write immediately to:

ALAN WHITE
D.S.I. LTD., ABELSON HOUSE
COVENTRY ROAD, CHELDON, BIRMINGHAM B26
Telephone: 021-742 3241

(1806)

Two Sales Executives

Two Sales Executives are required to join the newly-formed subsidiary of one of London's leading business machine specialists set up to handle the group's computer marketing.

The Sales Executives will be expected to have a detailed knowledge of the WP and DP market place proven by a good sales record.

The remuneration package should generate a minimum of £18,000 for the first year. A company car will be provided. The prospects are exceptional for those joining during this exciting start-up phase.

Please send brief C.V. or telephone

Trevor Boyce (M.D.)
Fleet Business Systems
Fleet Lane House
32-36 Fleet Lane
London EC4M 4YA
TEL: 01-248 9268

FBS

THE METYCLEAN GROUP OF COMPANIES

(1814)

SOFTWARE DEVELOPMENT PROFESSIONALS

COMPUTER AIDED DESIGN CAMBRIDGE

As one of Europe's leading specialist centres dedicated to computer aided design, CADCentre can offer an exceptional chance to develop in one of today's rapidly growing technologies.

At present we have a number of opportunities for able and enthusiastic men and women in the following areas:

PROJECT MANAGER... SOFTWARE DEVELOPMENT ENVIRONMENT

To lead and direct a team responsible for the specification, implementation and maintenance of a Software Development Environment. Based on the Centre's Prime computer network, this facility will assist and support the development of large CAD systems written in Fortran, with rationalisation of existing software tools and development of new ones as required.

GINO PRODUCT MANAGER

To be responsible for the support and development of graphics software products based on GINO-F and for their marketing and commercial exploitation. This will involve management of a team of programmers and considerable liaison and negotiation with customers and agents.

SENIOR PROGRAMMERS & PROGRAMMERS

To join teams working on a variety of projects including development and support of utility software, database management software and other software tools; development and support of systems software; and implementation and support of graphics software on microcomputers.

Applicants for all positions should have a good degree in Mathematics or a science discipline and a strong background of technical software development in Fortran. For some of the Programmer positions, experience of assembly level programming is desirable but not essential.

In addition to competitive salaries we can offer excellent opportunities for rapid career development in a professional and technically demanding environment.

If you are interested in this growth opportunity, please phone Terry Palmer on Cambridge (0223) 314848 or write with a c.v. to Mrs Pat Oughton, CADCentre, Madingley Road, Cambridge CB3 0HB.

Computer Aided Design Centre

(1754)

DEPARTMENT OF COMPUTING AND MICROPROCESSING APPLICATIONS

PRINCIPAL LECTURER IN INDUSTRIAL COMPUTING

£11,931-£15,018

Persons with considerable research experience in at least one of the areas of methodologies of systems analysis and design, networking, real-time operating systems and languages, on-line control and instrumentation, parallel processing systems or engineering databases are invited to apply for the above post. Previous teaching experience is desirable but not essential. The successful candidate will be eligible for election to the Professoriate if suitably qualified.

LECTURER GRADE II/ SENIOR LECTURER IN COMPUTING

(DATA PROCESSING AND SYSTEMS)
£6,985-£12,816

Candidates should have extensive experience in industrial or commercial practice with particular reference to data processing, systems analysis and design. Experience in the fields of database or real time systems would be welcome.

Further details and form of application from the Staff Officer, Trent Polytechnic, Burton Street, Nottingham NG1 4BU. Closing date 10 December 1982.

(1801)

TRENT POLYTECHNIC NOTTINGHAM

SENIOR ANALYST/ PROGRAMMERS

- ★ COMMERCIAL Systems design
- ★ BASIC Programming
- ★ MICRO/MINI Systems
- ★ Use of DISKETTES
- ★ USER Contact
- ★ 3 YEARS' experience

We are looking for a number of Specialists who match most of the above experience requirements.

We are expanding Software house and require people able to design and develop Systems for individual clients and for general use as packages.

Likely candidates will have the ability to learn new machines and languages quickly and will be flexible in their approach to work. They will also be able to work on their own.

The position offers a basic salary together with bonuses and other benefits related to experience and performance.

If you are interested and feel you suit this environment then please call:

ERIC DICKINSON or **RICHARD BARKER**
on (01) 843 2387 or write to:
R.S.B. Computers Ltd.
Wheatfield House
129-135 Fatwell Road
Teddington, Middlesex

Finance Department

ANALYST/PROGRAMMER

(2 Posts)
(AP.3/5 £5,973-£8,325

The Job

Development (from specification to implementation) of new systems centred on an ICL ME.29 configuration with communication and terminal links and using MTS and TME/TP facilities.

The Person

You have –
- design implementation experience of on-line systems.
- 18 months' Cobol programming background.
- preferably experience with ICL-based hardware and software.

There are excellent conditions of service in an attractive part of Suffolk.

For an application form and full details contact the Personnel Officer, Council Offices, Melton Hill, Woodbridge IP12 1AU. Telephone: Woodbridge (03943) 3789, Ext. 348.

Closing date: 9th December, 1982. Interviews 16th December, 1982.

(1771)

Suffolk Coastal District Council

URGENT CONTRACTS

IBM MVS MARK IV	DEC. START
IBM MVS SOS	NOW
DOS/VSE COBOL CICS DL1	JAN.
HP 3000 (Image query)	JAN.
VAX FORTRAN (Database)	NOW
Z80/RM 380Z EXPERT	NOW
DG MV 8000 FORTRAN (Seismic)	NOW
FORTRAN/TOTAL	DEC.
PL1 IMS (DB/DC)	NOW
HP 1000 FORTRAN (GRAPHICS)	NOW
UNIVAC 1100 COBOL	JAN/FEB/STARTS.

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Call: Vince Adams on: 741 7211
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(1979)

Software Support Specialist to £15K + CAR

Applied Data Research is the world's leading systems software vendor, offering the most innovative on-line products available to IBM DOS/VS(E) and MVS installations.

As a result of increased activity throughout Europe, ADR is now seeking to recruit an additional DOS Software Support Specialist who will be based in brand new premises in a pleasant, North Herts market town.

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If you feel that you have the necessary qualities to succeed in this prestigious and highly professional organisation, call Mick Chivers (Customer Support Manager) on Hitchin (0462) 55353 or write to him at the address below.

Applied Data Research Ltd., Portmill House,
37-40 Portmill Lane, Hitchin, Herts. SG5 1DJ.

(1781)

ADR

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System-Software

As part of our System-Software development and consultancy services carried mostly at our clients' sites, we offer

DB/DC ASSEMBLER-PROGRAMMERS

excellent opportunities to demonstrate their capabilities

We appreciate your existing knowledge and experience, but at the same time we provide a continuous training programme.

To discuss your further career plans, call or write to:

Fred Jaster, Managing Director

APOLLO GmbH
EDV-und Unternehmensberatung
Marienkirchplatz 7
D-4040 Neuss 1, W. Germany
Tel: 010 (49.21 01) 2 81 81

(1981)

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IBM OS/MVS COBOL CICS DL/1	ANALYST/PROGRAMMERS
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DPS8 DM4 COBOL	PROGRAMMERS
BURROUGHS 6800 (JANUARY START)	PROGRAMMERS
DATA GENERAL RDOS COBOL	ANALYST/PROGRAMMERS
MOTOROLA 6800 PASCAL	ANALYST/PROGRAMMERS
VAX 11/78 COBOL	ANALYST/PROGRAMMERS
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(1808)

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Computer Search Contracts

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CTL

SYSTEMS ENGINEER (Hardware)

to £13,000 + Car

an ITL Information Technology Company

Since the company's formation in 1966, Computer Technology Limited, have seen a substantial growth and established market leadership in the field of transaction orientated minicomputers. This success has created a requirement for an adaptable and self motivated **Systems Engineer** who will be responsible for preventative and corrective maintenance of a CTL system sited on customer premises. Applicants should have a minimum of three years' experience in a mini or mainframe environment and ideally have a relevant qualification or equivalent forces training in electrical/electronic engineering. In addition to an excellent salary and benefits package, CTL will provide a company car.

LOCATION: CENTRAL LONDON JA309/1

ACTS

PROGRAMMERS

Top Salary

ACT Services Limited, an established container transportation company are continuing their development of large documentary and associated commercial systems. The company would like to hear from self-motivated **Senior Programmers** capable of filling a leading role in these developments and with the ability to work within time scales. The successful candidate will work closely with analysts and should have around three to four years' experience in a large mainframe environment, preferably Burroughs, supporting Cobol. In addition to salary a comprehensive relocation package is available to suitable applicants as well as a range of benefits normally associated with a large organisation.

LOCATION: HAMPSHIRE JA309/2

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dp

Confidential Reply

SOFTWARE ENGINEERS SOFTWARE PROGRAMMERS

to £9,500

Our client has a world wide reputation for designing, building and installing integrated software and engineering systems. Opportunities have arisen for Software Engineers and Programmers from a mini/micro environment to work on display and data handling systems for advanced technical applications. **Software Engineers** should have about four years' experience including programming, systems design and implementation gained in a senior role. Involvement with real time applications would be preferable. **Software Programmers** should have about two years' experience including Assembler or a high level language. Program specification and systems appreciation would be an advantage. Company benefits are generous including flexible working hours, relocation and five weeks' holiday.

LOCATION: ESSEX JA309/3

TYMSHARE UK

PROGRAMMER

to £10,000 + Car

Tymshare, an international computer services company, are establishing a support group for IBIS, their highly successful Banking System. A **Programmer** is required to carry out customisation and implementation of the product to individual customer requirements. The post involves a high degree of client contact and the successful candidate will enjoy a key role in a group which will expand rapidly. Applicants should have a minimum of two years' Basic+ or Basic+ 2 gained under VAX/VMS or RSTS. A knowledge of banking systems would be particularly advantageous. In exchange Tymshare offer a highly competitive salary and company car after a qualifying period.

LOCATION: CENTRAL LONDON JA309/4

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dp

Confidential Reply

DATABASE TECHNICAL SUPPORT

£ excellent

A well known drinks manufacturer have a ground floor opportunity within a new database administration function being set up to design, implement and support a large IMS DB/CICS system. Candidates, if not experienced will be trained in all elements of **Database Administration** and Data Dictionary Control. Applicants should have a solid DP background and an interest in a database technical support role. A knowledge of DL/1 or Datamanager is desirable but not essential as training will be provided. This position offers an excellent salary, which is in a range according to experience, and a benefits package normally associated with a successful organisation.

LOCATION: ESSEX JA309/5

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dp

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To continue our expansion, we are seeking additional consultants. You may currently be experienced or wish to develop your career – whichever, we are interested in talking to you. **Remuneration will exceed your current earnings.** For an informal discussion ring Thomas Kay or clip the coupon below and we will be in touch.

LOCATION: WEST LONDON JA309/6

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Name .....

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.....

Home tel. ..... Work tel. ..... Ext. .....

I am interested in Ref. .....

(1945)

Applied Communications Inc., a US Corporation with offices located in key centres in the USA is a major Systems House specialising in on-line systems on Tandem Non-Stop Computers. ACI has installed more than fifty sophisticated switched networks, a significant proportion of which are in the Financial sector. The UK subsidiary is expanding both its Products and Systems Divisions. The Products Division specialises in the definition, specification of requirements, system configuration, testing, installation and subsequent support of comprehensive software packages aimed at the Banking, Financial and POS markets. The Systems Division develops customised solutions to client requirements from Project Initiation through to Customer acceptance. These, too, are Tandem Non-Stop implementations.

ACI has the following specific vacancies:

Senior Analysts

£12000-£14000

We require Senior Analysts to work on the implementation of large Transaction Authorization systems based on a comprehensive and sophisticated package operating on Tandem equipment. Applications are in Electronic Funds Transfer, Point of Sale and Retail Distribution Networks. Assignments include Analysis and Specification of Requirements, System Configuration, File Specification and Custom Application Program Specification. Involvement is from project initiation through to installation and testing. In some cases, a Team Leader role will be undertaken.
Applicants should have approximately 6 years Programming/Analysis experience with specific skills acquired in at least one of the following:

Interactive Transaction Processing
Database Design
Communications Network Analysis
Systems Programming
Finance and Banking Applications

Systems Programmers

£11000-£13000

These appointments are for Programming staff to work on Custom developed software systems implemented on Tandem equipment. Typical applications are Hotel Reservations Systems, Electronic Funds Transfer Systems, Integrated Message Switches, Videotex services. Our Systems Programmers are involved in System Specification, Program Design and Implementation, System Integration, Testing and Customer Installation.
Minimum qualifications are 4 years Systems programming experience in at least one of the following areas:

Communications Software
X.25 Implementations
Operating Systems development
Message switching applications

All appointments may involve travel to client sites which are usually within the local area, although flexibility to work on specific assignments for extended periods away from home will be an important consideration. This could involve travel to the US or other worldwide destinations.
Full training on Tandem Systems will be provided and there will be opportunities to work in other areas of the Company.

To discuss your future career with Applied Communications, telephone Alan Moxon or Chris Peat on 01-423 2131.
During evenings or weekends telephone Alan Moxon, Whipsnade (0582) 873106 or Chris Peat, Welton-on-Thames (09322) 22644 or write to:

Manager, Customer Services, Applied Communications Ltd.
1-9 Peterborough Road, Harrow, Middlesex HA1 2AZ.

(1788)

ACI applied communications
the company with the right connections

The Centre For Computer Studies Singapore

THE BRITISH COUNCIL

Director—Rodney Shaw

Additional ACADEMIC STAFF are required for May 1983, or an earlier date if desired, to support the continuing development of the CENTRE FOR COMPUTER STUDIES which was established in September 1982 within Ngee Ann Polytechnic, Singapore. The Centre's principal function is to provide an HND in Computer Studies course with an annual intake of 200 students.

DUTIES AND QUALIFICATIONS:
Candidates should be capable of lecturing at HND level and able to offer one or more of the following specialist areas:

Computer Systems Architecture
Computer Communications and Networks
Database Theory and Practice
Distributed Systems/Teleprocessing
Microcomputers and Small Business Systems
Real-time Systems
Structured Programming using Cobol
Systems Analysis and Design

Candidates should also be academically well qualified with appropriate professional and lecturing experience. Appointments at senior staff levels require several years' experience at PL or SL level within a Polytechnic or College of Technology.

TERMS AND CONDITIONS OF SERVICE
A generous package of salary plus allowances, including accommodation and children's schooling, will be negotiated with each successful candidate. Contracts will be initially for two- or three-year periods of appointment. Salaries up to £20,000 per annum are available for senior staff appointments.

APPLICATIONS:
Further particulars of the posts and application forms may be obtained by telephoning 01-580 65722, extension 41, or writing to Overseas Educational Appointments Department, The British Council, 90-91 Tottenham Court Road, London, W1P 0DT, quoting reference 82 A 115-118. The closing date for applications is December 20, 1982, with interviews taking place in London during the middle of January 1983.

THE BRITISH COUNCIL

(1179)

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We have made a name for ourselves around the world designing and manufacturing a unique range of computers and terminals for use in complex computer networks.

We are British. We are successful and growing fast. We need bright and enthusiastic people to grow with us.

WE NEED PROGRAMMERS
Programmers with at least 2-3 years' experience in real-time microprocessor assembler programming.

WE NEED PROJECT ENGINEERS
Project engineers with experience in controlling a project from its initial order stage to final despatch and installation, such that the technical and commercial requirements are met in the contracted time scale.

We will certainly pay you your worth and provide a range of fringe benefits normally associated with an international company.

If you can fulfil the above requirements and want a challenging job, phone Mr. Bob Drummond on Henley (04912) 79427 or write to him at: VIDECOM LIMITED, New Town Road, Henley-on-Thames, Oxon.

(1789)

Senior Programmer and Systems Analyst
Surrey/Sussex Borders — **to £12,000**
A motor company located in a pleasant town on the Surrey/Sussex borders require two additional people for their ICL 2958 installation. The Senior Programmer should have 3 years' Cobol experience with a Real/time and batch background. The Systems Analyst should have 5 years' Commercial Systems experience some on-line knowledge and a programmers background.

Senior Programmer
City of London — **c. £10,000**
A financial investment company have a excellent opportunity for a Programmer with at least 3 years' experience Cobol and DL/1 are essential requirements for the position and the successful applicant will work a Database administration.
The position is flexible enough that it could also suit someone who wishes to become a Programmer/Analyst.

Senior Programmer/Analyst
Middlesex — **to £12,000**
A Senior Programmer/Analyst is required by a well known UK company in West London. Five years' Cobol experience with two years of CICS are the essential requirements. A knowledge of Analysis and design is necessary also the candidate will work on a variety of commercial and manufacturing systems which are run on a IBM 4341.

Systems Analyst and Programmers/Analyst
Central London — **£7,500 to £13,000**
An International oil company requires two experienced computer professionals for their London Data Centre. The System Analyst should have five years' experience working on an IBM Systems of which 2/3 years should have been using CICS/Cobol. The Programmer/Analyst should have 1-3 years' MVS – JES 2 using Cobol. A knowledge of CICS RTL1 would also be very helpful.

All the above opportunities include permanent positions and carry a wide range of salaries and positions depending on location and experience. In the first instance please send us a copy of your CV (alternatively telephone for application form) so that we can discuss your application in confidence with our client on your behalf.

DATAMATICS
RECRUITMENT SERVICES
01-399 9183
Datamatics, Freepost, Surbiton, Surrey KT6 5BR

(1818)

Imperial Cancer Research Fund
ANALYST/ PROGRAMMER

Imperial Cancer Research Fund requires an analyst/programmer to work on a microcomputer-based medical system in their extra-mural unit at Guy's Hospital. Experience in any of the following would be useful: CP/M operating system, BASIC, PASCAL, database work. £5,463 to £8,886. For job description and application form ring Mrs Hamer, 407 7650 ext. 2363, or write to her at ICRF Breast Cancer Unit, Guy's Hospital, London, SE1 9RT.

(1818)

CHESHIRE COUNTY COUNCIL

COMPUTER PROGRAMMER FOR EDUCATIONAL PROJECT

This is a temporary post – full-time from 1st January to 31st July, 1983.

A programmer is required at Great Sankey High School, Warrington, to work with a team of teachers under an MEP funded project to produce five packages of Educational Software for the BBC micro-computer. Experience of micro-computers and machine code programming would be an advantage.

Salary at a rate of £5,500 p.a.

Apply by letter to:
The Headmaster, Great Sankey High School, Barrow Hall Lane, Great Sankey, Warrington, Cheshire.

Closing date 29th November, 1982.

(1844)

UNIVERSITY OF LONDON
MANAGEMENT SYSTEMS DIVISION

Computer Operator

(initially two-shift, gross salary £5773-£7301 under review)

A vacancy exists in the Computer Installation for a Computer Operator with a minimum of 18 months' experience, mainly on ICL equipment.

The post holder would be required to work two shifts, although eventual transfer to three shifts is not precluded.

The installation comprises 2 ICL 2958 Processors, with 11 202 Mb discs, 8 MT, 4LP and a range of other devices. The equipment is run under DME/2. In addition to the ICL machines, three small computers are installed. A large computer network services administrative computer users spread throughout London.

The successful applicant will receive a salary in the range £4,848-£5448 with a 15% shift premium. A London Allowance of £1,400 is payable in addition. The salary scale quoted is currently under review.

Applicants should telephone 636 8000 extension 3795, between the hours of 10am to 12.30pm or 2.30pm-5pm and ask for the Operations Team Leader.

(1798)

CMG

need

SYSTEMS AND PROGRAMMING CONSULTANTS

Salaries
£7,500-£20,000
+
benefits package

Telephone Carole George on 01-680 7027
for an application form or tell her when and where you can be contacted.
Anytime at home or at work.

Tudor Francis
CMG (UK) Ltd - Personnel Director
will be delighted to telephone you to discuss opportunities available.

Computer Management Group (UK) Limited. Sunley House, Bedford Park, Croydon CR0 2AP.

(1887)

CMG
EUROPE'S LEADING INDEPENDENT COMPUTER SERVICES COMPANY.
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FTB

Recruitment Consultants

£19,500 + GTI or XR3

(£60,000 on target revenue)

To coincide with the move into our new purpose built, prestige offices, we are looking for top Recruitment Consultants already generating substantial revenues for their companies.

It is essential that you are highly motivated, enjoy a demanding, fast moving environment and are willing to make a significant contribution to the development of the business.

Targets are extremely realistic for the calibre of people we require and you will be surprised by the earnings potential.

We have an outstanding growth record in the fields of Executive Search, Data Processing and Accountancy Recruitment and have an established client base who respect our philosophy and methods.

This is a unique opportunity to expand your talents and ideas in a young and dynamic organisation.

Contact in strictest confidence, David Hendry

Ferguson Thorley Bowles Associates Limited
International Personnel Consultants
15 Clarence Street, Staines, Middlesex TW18 4SU
Telephone: Staines (0784) 59247 Telex: 8814148

(1798)

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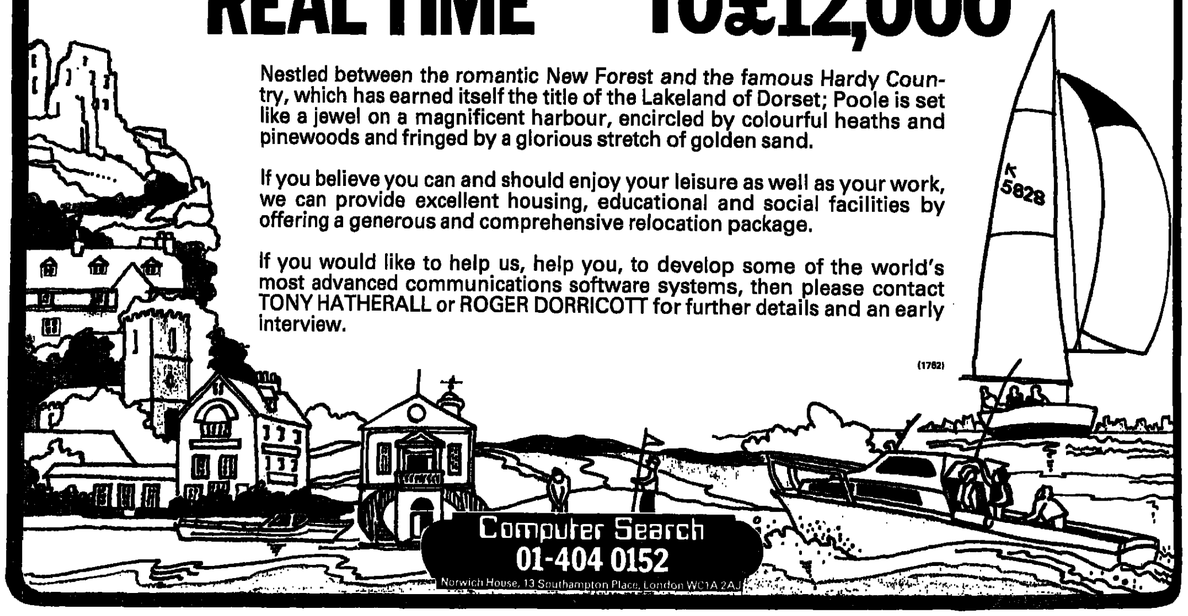


Nestled between the romantic New Forest and the famous Hardy Country, which has earned itself the title of the Lakeland of Dorset; Poole is set like a jewel on a magnificent harbour, encircled by colourful heaths and pinewoods and fringed by a glorious stretch of golden sand.

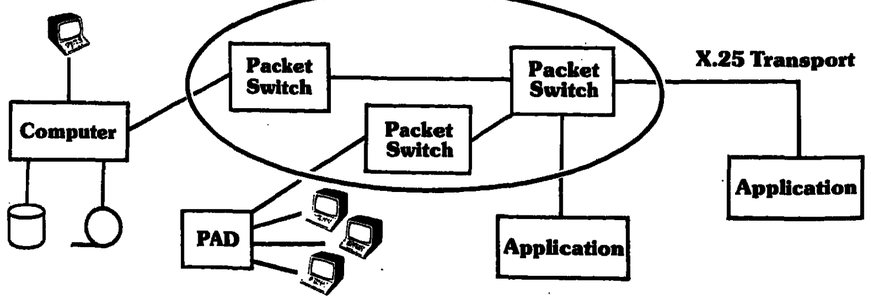
If you believe you can and should enjoy your leisure as well as your work, we can provide excellent housing, educational and social facilities by offering a generous and comprehensive relocation package.

If you would like to help us, help you, to develop some of the world's most advanced communications software systems, then please contact TONY HATHERALL or ROGER DORRICOTT for further details and an early interview.

(1762)

Computer Search
01-404 0152
Norwich House, 13 Southampton Place, London WC1A 2AJ

X25 Network Development



Consultants/Team Leaders to £15,000 Senior Programmers to £12,000 Programmers to £9,000 Hertfordshire Based

Our client has just commenced work on the development of one of the largest multiple node networks of computer communications systems in Europe. Being a large successful manufacturing company they have the facilities and credibility to handle a project of this size. Early feasibility studies and planning phases are initiated but the main design and implementation teams will be newly recruited.

These are attractive opportunities for experienced software people to extend their existing skills. The range of people required accommodates those who may already be very experienced in communications to those who may have little to no communications knowledge but who are experienced systems software people. The team sizes will be small with tasks varying in complexity from state-of-the-art design problems to implementing new network management routines. There is no doubt that genuine software specialists will find the work stimulating and satisfying. We would be pleased to hear from anyone with technical programming experience who feels capable of making a contribution in this high growth sector of computing.

The company operates a contributory pension scheme with free life insurance and group rates to a private health plan. Relocation assistance where appropriate.

Apply in confidence to Terry Harvey by sending personal and career details, or contact him for an application form, evenings Gt. Missenden (02406) 4705 or daytime as below.

HR

H. R. Associates Limited

Executive Computer and Technical Personnel Consultants
57a Hill Avenue, Amersham, Bucks. HP6 5BX Tel: 02403 28383
London office Regent Street W1

HR

Software Support Consultants

for Major Computer Manufacturer

UK and Foreign Travel

North West based

c £16,000 plus car

Successful computer manufacturers are only as good as their products and support. We have an innovative and high quality product range, a key element of which is our internationally acclaimed large scale IBM compatible system, which places us right at the forefront of technology. Therefore to ensure our position is maintained as one of the world's leading manufacturers, our support needs to be second to none. As a result, we now require Specialists to provide expertise within the following areas:

Database Specialist

For this position we are seeking a detailed knowledge of IMS, DB, and ideally DC with experience of sizing and performance tuning, and a good understanding of other IBM compatible database products, and TP software.

Data Communications Specialist

Communications software expertise gained within an IBM environment, utilising large network technology is required, specifically knowledge of VTAM/NCP internals, and ideally additional software such as TPNS, NPDA, NCCF.

In both instances, of equal importance is the ability to demonstrate a high degree of personal communication skills in order to represent our Organisation at the highest level.

If you meet these specifications, we will offer benefits which will include an excellent salary, company car and relocation expenses where appropriate.

If you wish to share our success, contact our Advising Consultant **Peter Lees** on **021-236 3781** (24 hour answering service) or 0902-632141 (Evenings and Weekends). All applications will be treated in the strictest confidence and interviews will be held in Birmingham, Manchester, and London.

Technical, Sales & Management Appointments

(1776)

Specialist Computer Recruitment Ltd

SOUTH	MIDLANDS & INTERNATIONAL	NORTH	BELGIUM	HOLLAND
James House, 46 James Street, London W1M 5HS	35-37 Great Charles Street, Queensway, Birmingham B3 3JY	International House, 84 Deansgate, Manchester M3 2ER	Avenue Louise 327, Boite 4, 1050 Bruxelles	Willemsparkweg 92, 1071 H.M. Amsterdam
01-935 0671/486 0461	021-236 3781	061-833 0427	010 322-640 7151/71	010 3120-760947

Project Leaders

Installing the latest IBM system 38 hardware in their divisional headquarters in **Derby** and upgrading their system 34's in **London** and **Suffolk**, this company is now poised to develop brand new systems across a wide range of manufacturing, distribution, financial and commercial applications. Using the latest techniques involving the networking of System 34's, 38's and micros, major systems under review include –

- MAAPICS
- NEW MANUFACTURING SYSTEMS
- FINANCIAL MODELLING
- FACS
- CADCAM
- WORD PROCESSING
- FINANCIAL FORECASTING
- ORDER PROCESSING

They are now seeking to recruit several first class DP professionals to undertake full responsibility for the above projects.

With around 3 years' experience of IBM GSD systems, the successful candidates will probably be Senior Systems Analysts working in a manufacturing environment. Experience to date will include a thorough understanding of analysis, preferably including the ability to conduct a full feasibility study, although training can be given in this area, and RPGII or RPGIII programming.

Aged 25/38, applicants will be prepared to travel to remote sites to take stand alone responsibility for the necessary investigative procedures on these major projects.

An attractive five figure salary package will be put together for the right candidates plus full relocation + excellent fringe benefits.

For details and early interview phone **Phil Harckom** on **021-643 8501** (business hours) or **021-308 4285** (eves/wknds) or fill in and return the freepost coupon to FREEPOST, Computer People Midlands, Alpha Tower, Birmingham B1 1BR.

Computer People Midlands

MVS Systems Programmers

London and The West Country

c £15,000 + Car

Maintaining our position as one of the world's leading Computer Manufacturers demands innovative and high quality products – and support of the highest calibre.

Our large scale IBM compatible system has been internationally acclaimed, and is the major component of a superb product range ensuring our future success. Our Support Team already comprises highly skilled professionals with vast experience within the IBM mainframe/compatible market. As part of our accelerating development plans we are now able to offer Systems Programmers/Systems Engineers an opportunity to join this team.

We require Candidates with sound experience of MVS, however equally important you should be able to demonstrate well developed interpersonal skills, enabling you to work closely with our customers on all aspects of software development and support.

Opportunities are currently in the London area and The West Country, and we are happy to relocate suitable Candidates.

These positions undoubtedly represent considerable challenge to enthusiastic and career minded individuals wishing to advance their career within a thoroughly professional and dynamic Organisation, so no matter whether you are currently working for a User, Software House or Manufacturer telephone now our Advising Consultant **Peter Lees** on **021-236 3781** (24 hour answering service) or 0902-632141 (Evenings and Weekends).

Interviews will be held in London, Birmingham and Manchester.

Technical, Sales & Management Appointments

(177m)

Specialist Computer Recruitment Ltd

SOUTH
James House, 46 James Street, London W1M 5HS
01-935 0671/486 0461

MIDLANDS & INTERNATIONAL
95-97 Great Charles Street, Queensway, Birmingham B3 3JY
021-236 3781

NORTH
International House, 84 Deansgate, Manchester M3 2ER
061-833 0427

BELGIUM
Avenue Louise 327, Bolte 4, 1050 Bruxelles
010 322-640 7161/71

HOLLAND
Willemsparkweg 92, 1071 H.M. Amsterdam
010 3120-760947

VIDEOTEX & COMMUNICATIONS WOKING, SURREY

Systems House, Intercom Data Systems Limited urgently require experienced

SOFTWARE DESIGNERS – £9-12K

PROGRAMMERS – £7-10K

to work in-house on Videotex and Communications Software products and on client projects. Pleasant, challenging, professional, small team environment with opportunity to travel abroad. Initiative will be rewarded with early advancement and responsibility.

Candidates must have software development experience on PDP-11 minicomputers using RSX-11M operating system. Knowledge of VAX and communications systems will be an advantage.

Intercom Data Systems is a small company offering exciting opportunities. Although at present based in the City of London, we are relocating to Woking in February, 1983.

Reply in confidence to
David Gilbert
Managing Director
Intercom Data Systems
3 Lloyds Avenue
London
EC3N 3DS
01-481 9827 or 01-488 2741

(1783)

INTERCOM DATA SYSTEMS LIMITED

EXCELLENT CONTRACTING OPPORTUNITIES

Our immediate domestic and international consulting needs are detailed below. If you are of a professional disposition, skilled and dedicated, and wish to join our growing permanent or contract staff, please contact us in respect of these and future opportunities.

INTERNATIONAL:		
FOCUS or RAMIS	**Analyst/Programmers**	**USA**
COBOL, ICL2900, VME/B	**All levels**	**Kuwait**
UK		
RPG III, S/38	**Programmer, Programmer/Analyst**	**Berkshire; London**
ADABAS, NATURAL	**Programmer/Analyst**	**London**
COBOL, IMS/DB and/or DC, ADF	**Programmers, Programmer/Analysts**	**Home Counties; Worcs, Essex**
IMS/DB	**Database Administrator**	**Home Counties**
Mark IV, COBOL, TSO/SPF	**Programmer**	**London**
NOMAD, RAMIS, FOCUS, INQUIRE	**Programmer/Analysts**	**Home Counties**
RPG II, S/34, MAAPICS	**D P Manager**	**London**
COBOL, WANG, ASSEMBLER and/or COBOL, CICS	**Programmers Programmers, Programmer/Analysts**	**London London**
S/38	**Project Leader/ Senior Analyst**	**London**
PL/1, CICS	**Programmer/Analysts**	**London**
HP 3000, RAPID	**Programmer/Analysts**	**London Aberdeen**

For more information please contact:
Group Resources Department
TANGENT COMPUTER SERVICES LTD.
102/106 South Street
Romford
Essex RM1 1RX
Tel: Romford (0708) 750201
(24-hour answering service)

(178m)

CONTRACTORS

Chance is a fine thing, but...

There is now a powerful alternative to the "roulette" procedure for selecting contractors.

The National Computer Contract Directory is now working. Both contractors and subscribers are NOW deriving major benefits:

FOR CONTRACTORS	FOR SUBSCRIBERS
1. Substantial increases in income.	**1.** Positive reduction in costs.
2. Far wider choice of assignments.	**2.** Access to a large central source of people AND information.
3. Service completely free of charge!	**3.** Total cost of approximately £1 per day!

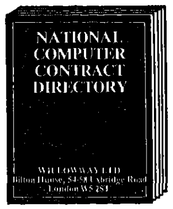
Computer users who would like to find out more about becoming subscribers, please ring Dee – 01-567 3501

Bringing contractors and computer users into direct contact, in a major and practical way, is the service the industry has been asking for. The National Computer Contract Directory fulfils this need and is becoming the standard tool for anyone whose job it is to resource a project.

Subscribers to date include BANKING, INSURANCE, MANUFACTURING, FINANCIAL, SOFTWARE HOUSES, ELECTRONIC, GOVERNMENT, COMPUTER MANUFACTURING, TELECOMMUNICATIONS, AGRICULTURAL, PETROLEUM ETC.

FOR CONTRACTORS: Increases in income have varied from **£52** to **£123** per week.

FOR SUBSCRIBERS: Savings in costs have varied from **£50** to **£370** per week!



The National Computer Contract Directory uses technology to assemble and maintain a central COMPREHENSIVE source which is available to EVERY computer user.
It may be a fine thing but there is now an alternative to relying on chance!

Your entry will remain permanently in the directory. All you have to do is complete this form. It costs you nothing and gives you access to substantial increases in income and a wider choice of contracts.

THE DIRECT ALTERNATIVE

DIRECTORY ENTRY DETAILS

This section is not for publication. (Contact details are not released without prior consent).

NAME: –

ADDRESS

TEL. NO.:

NO OF YEARS EXPERIENCE

PREFERRED UK WORK LOCATIONS:

WILL YOU CONSIDER WORKING ABROAD?

WHEN WILL YOU BE ABLE TO START YOUR NEXT CONTRACT? MONTH YEAR

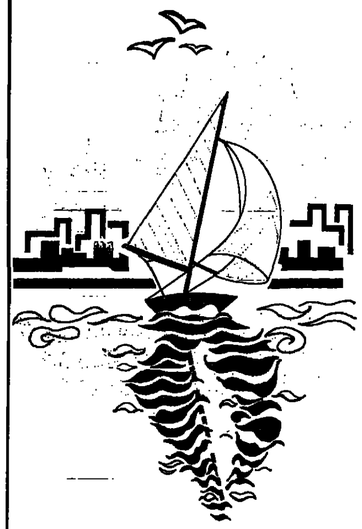
JOB CATEGORIES

CATEGORY	NO OF YRS	CATEGORY PREFERRED
PROGRAMMER		
ANALYST		
ANALYST PROGRAMMER		
SYSTEMS PROGRAMMER		
CONSULTANT/PROJECT MANAGER		
OTHER – SPECIFY		

HARDWARE EXPERIENCE MAKE/S	MONTHS	PROGRAMMING LANGUAGES E.G. APL, FORTAN, ETC	MONTHS	APPLICATIONS SOFTWARE E.G. CICS, TOTAL ETC	MONTHS	SYSTEMS SOFTWARE E.G. DOS, MVS, ETC.	MONTHS	APPLICATIONS E.G. PAYROLL, ORDER ENTRY ETC	MONTHS	ENVIRONMENT E.G. BANKING, MANUFACTURING ETC	MONTHS

FURTHER INFORMATION: (NOT MORE THAN 50 WORDS) PROGRAMMERS ARE ADVISED TO DESCRIBE THE DEPTH OF THEIR PROGRAMMING EXPERIENCE AND ANALYSTS SHOULD LIST THOSE AREAS OF SYSTEMS ANALYSIS IN WHICH THEY ARE EXPERIENCED I.E. FEASIBILITY STUDIES, SYSTEM DESIGN, PROJECT RESPONSIBILITY, USER INVOLVEMENT, MANAGEMENT EXPERIENCE ETC. IN ADDITION YOU SHOULD MENTION ANY SPECIALIST EXPERIENCE YOU FEEL IS RELEVANT TO THE CURRENT MARKETPLACE.

PLEASE RETURN TO: **WILLOWAY LTD (THE NATIONAL COMPUTER CONTRACT DIRECTORY)**
FREEPOST LONDON W5 2BR.



Real Time on the South Coast...

....enjoy the best of both worlds

Although "the new technology" is changing our lives in an abundance of ways, the area of Communications technology is perhaps the most significant and far reaching.

As one of Europe's foremost research and development organisations in this field, we are heavily committed to developing the technology and systems needs of the future for use by industry, commerce, government and the general public. We have reached a very exciting stage in a number of projects – voice, text and message switching systems and networks to name but a few – and urgently require the help of capable and committed Technical Staff to further our developments.

No matter what your hardware or technical background or level of experience in Real Time programming and design, we can offer you a stimulating and responsible role in our plans. Our salary level can accommodate all levels of ability from junior through to senior and an extremely generous subsistence and relocation package is available.

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So wherever you live and whatever you're doing, if you want more involvement in a challenging Real Time environment and a better lifestyle – in fact, the "best of both worlds" – call our Advising Consultants now:

Steve Stark (in London) **01-935 0671**
01-804 7662 Evenings and Weekends

Martin Stainthorpe (in Birmingham) **021-236 3781**
021-744 1862 Evenings and Weekends

(1778)

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021-236 3781

NORTH
International House, 84 Deansgate, Manchester M3 2ER
061-833 0427

BELGIUM
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010 322-640 7161/71

HOLLAND
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010 3120-760947

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Important supermini manufacturer in Berkshire (M4) wishes to enhance their SPECIAL SYSTEMS group with a communications consultant working on Packet Switching, local area networks, mainframe protocols, X25 and British Telecom services, etc. Lots of variety and contact with clients – support sales and implementation of major projects – career experience second to none! Relevant software experience at a University is appropriate, with very good salary and benefits for more senior people. Ref: CA251.

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PROJECT LEADER **£8-11K + BONUS**

Exciting opportunity to join leading software house about to install a new prestigious minicomputer. Ideal for young programmer interested in using RPGII experience to gain immediate promotion. Your chance of leading MULTI programmers to increase their commercial systems awareness and financial rewards. Ref: CG1034.

JUNIOR CONSULTANT **£10-12K + car**

This well-known professional group provides consultancy services to their existing client base covering DP – micros – office technology. You will understudy some of the best commercial, financial, industrial people in the country, preparing for your own U.K. and international assignments when ready. If you are interested in applications and have good qualifications then no specific languages, hardware, etc., are required. Ref: CS7.

WHY COMMUTE!

WOKING **£8-13K + benefits**

This secure local company has a total commitment to its DP facility and staff and is offering positions at several levels to work on their new financial systems (VME/B + COBOL if you are interested in programming). Cheap mortgage – interest-free loans – flexi-time – great sports and social club! Ref: CG1038.

WIMBLEDON **£12-16K**

Successful systems house specialising in IBM COBOL PL/1 or ASSEMBLER can give keen young analyst/programmer opportunity to broaden their applications experience – essential for senior roles or a move into consultancy. Very good travel and local amenities and variety and client contact and top-quality projects. Ref: CD421.

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CUSTOMER ENGINEERS U.K./EUROPE **£££ + car**

Our client holds important contracts in the publishing field and offer unique opportunity to a keen young engineer interested in variety customer contact, problem-solving and promotion. Training in USA – you will be based in UK with some travel to Europe. Above average basic leave, car, training and generous holiday leave and allowances. Dramatic expansion – very urgent!

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GET INTO COMPUTERS/COMMUNICATIONS!

Start at £7-8K as Electronics Technician in test, fault-finding, trouble-shooting – all the way from Repair to Customer Service. Within about 2 years you will be considered for promotion and other responsibilities. If you have some 'hands-on' experience and technical qualification, call today. Ref: EM118.

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PROJECT LEADER **£11K + car**

MIDDLESEX BASED

RSX - FORTRAN - VIEWDATA background will secure. Ref: CA288.

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(1782)

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HOLLAND
Tandem Software Engineers c.£15,000 p.a.
A leading European software house with to recruit software engineers with at least 2 years Tandem experience preferably with in-depth communications knowledge.

BELGIUM
Telephony Software Engineers to £25,000 p.a.
A large multi-national corporation require people with 3-4 years experience of system X or 12 with PL/1, Pascal and Assembler languages. One year renewable contracts. Accommodation provided.

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IBM Systems Programmers
A leading Italian software house require degree level candidates to take the following positions

MVS Systems Programmer – 4/5 years IBM Systems programming experience with fluency in Assembler and a high level language, preferably PL/1.

VTAM Systems Programmer – 2 years experience of on-line environment, good knowledge of SNA and VTAM 2 under MVS. Assembler language. Knowledge of IBM 3705. Modems and associated equipment.

DB/DC Systems Programmer – to design, install and maintain CICS/OS and DL/1 or IMS DB/DC system, define CICS interface, promote DB standards and produce CICS exits. Assembler mandatory, DB Dictionary knowledge desirable.

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We have several requirements for successful DP/WP Salesmen offering at least 3 years experience.

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Field Engineering Manager to £24,000 tax free
To set and control a service organisation covering computers, WP, copiers and business equipment. Previous experience essential.

SAUDI ARABIA
Training Manager to £24,000 tax free
To set up and implement training courses for computers, WP and business equipment throughout Saudi and possibly the Gulf region. Candidates must have a degree.

For further information please telephone or write to Capp Associates quoting ref: CW123-2F for immediate attention.

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Capp House, 96d South End, Croydon CR9 3SD
International & UK Recruitment Consultants

TEAM LEADER

up to £12K South Bucks

"to make a significant contribution to our ambitious systems development programme"

Amersham International is a highly successful world leader in the supply of sophisticated technical products for use in medicine, research and industry. Our expanding world-wide business operation calls for a rapid expansion in corporate information systems resources to meet the needs of an ambitious systems development programme covering production, finance and marketing applications.

We now seek a Team Leader to manage a group of programmers/senior programmers working on the development of a range of on-line data base systems for a distributed processing environment. We currently operate an ICL-based network using IDMS data base systems, but are actively reviewing our future hardware needs to upgrade the system. The ability to stimulate, adapt to and manage change is essential.

Candidates should possess:

- ★ extensive COBOL experience
- ★ ideally 2-3 years' in a team leading role
- ★ experience of data base and on-line systems development and
- ★ knowledge of modern programming techniques

Excellent benefits include relocation assistance to this attractive South Buckinghamshire location.

(1820)

Please contact Mrs. Joan Cook on Little Chalfont (02404) 4444, ext. 3570 for an application form or write to her at the address below with full career details.

Amersham International plc
White Lion Road Amersham
Buckinghamshire HP7 9LL

Amersham

SOFTWARE ENGINEERS

Digital Telecommunications Systems Development

SALARY: between £8,000 – £10,800 **MALMESBURY, WILTSHIRE**

The continuing world-wide success of the Philips PRX range of computer controlled digital public telephone exchange systems has initiated further expansion of our development activity.

We now have opportunities for Software Engineers within our U.K. PRX development group, who will be responsible for the design, implementation and testing of software for modern digital telephone systems; call processing and network routing, signalling and test equipment controllers. You will be expected to participate in group meetings at our other development centres throughout Europe.

The languages used are CHILL (a C.C.I.T.T. language similar to ADA) and Zilog Assembler.

Successful applicants will have either a degree in Computer Science or other discipline with a strong computing content, together with up to three years' programming and software design experience in scientific or control systems, microprocessors or telecommunications.

We are based in Malmesbury, a small historic town situated just south of the Cotswolds with good road and rail links to London and the South West, attractive housing and excellent schools. We also offer 25 days annual leave, staff restaurant, Private Patients Plan at concessionary rates, staff discount on Philips products, social and sports club and relocation assistance if necessary.

Write for further information to Jonathan Harris, Personnel Officer, U.K. PRX, c/o TMC Limited, Philips Business Systems, Swindon Road, Malmesbury, Wiltshire SN16 9NA. Tel: Malmesbury (06662) 2861 Ext. 2209 quoting reference M0179.

PHILIPS Telecommunications

Simply years ahead

PHILIPS

SOFTWARE ENGINEERS
LOOKING AHEAD TO THE FUTURE
SCOTLAND

The future has never looked so bright at NCR — the world's second largest computer company. Advanced Microprocessor technology, first class design, development and manufacture and £multi-million investment in R&D have made us the leading suppliers of Self Service Financial Terminals to banks and financial institutions in the UK and throughout the world. And we're now poised for even greater expansion over the next few years.

Five major new products under development in an expanding engineering group have created exciting opportunities for systems software specialists to develop and implement advanced microprocessor terminal systems and minicomputer applications. You will join one of our multi-disciplinary teams developing:

- terminal control operating software
- microprocessor controlled devices
- communications network software
- system generation, distribution and debug utilities

In this rapid-growth, high-technology environment, we can offer an organised career structure which constantly produces opportunities for fast advancement for the 'above average' performer, highly competitive salaries, large-company benefits and a generous relocation package. Furthermore, you'll enjoy living in Tayside (on the beautiful East Coast of Scotland) with its abundant indoor and outdoor sporting facilities and good quality, reasonably priced housing available in many different locations.

Whatever your level of experience, NCR can offer you a bright future. Please write with full career and personal details to:

Ian Hume, Manager — Employee Relations, NCR (Manufacturing) Limited, Kingsway West, DUNDEE DD2 3XX. (1804)

NCR

UNIVERSITY OF KENT AT CANTERBURY

RESEARCH FELLOW IN CAD/INTEGRATED CIRCUIT DESIGN

Applications are invited for the post of Research Fellow in connection with an investigation funded jointly by the SERC and the University into computer-assisted design of digital systems. The successful applicant will be required to develop and mount CAD packages for the design of digital systems and integrated circuits for use in the Digital Systems Laboratory. Candidates will be expected to have experience in high-quality software production and/or digital system design. Knowledge of the UNIX operating system would be desirable. The appointment will be for two years in the first instance within the salary range £5,615 to £9,510 on the Grade IA scale. Application forms and particulars may be obtained from the Senior Assistant Registrar, Faculty of Natural Sciences, Chemical Laboratory, The University, Canterbury, Kent, CT2 7NH, to whom completed applications should be returned by December 15, 1982. Please quote ref. A/2782/CW. (1788)

DARWIN COMMUNITY COLLEGE

SCHOOL OF BUSINESS & ADMINISTRATION
Department of Business Studies

LECTURER/SENIOR LECTURER
Grade 1 — Data Processing

Position No: SM26

SALARY: $28,127-$30,118; $30,781-$32,782 pa.

In addition to salary a District Allowance of $1,888 pa (with dependants) or $1,122 pa (without dependants) is payable.

This position is offered as a long-term contract appointment with a minimum tenure of three years, although the College may make a tenured appointment to attract suitably experienced staff.

The Department of Business Studies is seeking a Senior Lecturer to be responsible for the Data Processing major of the Bachelor of Business program. The appointee will be expected to undertake the development and teaching of the Data Processing units in the program and to teach in other programs offered within the School. These programs include the Certificate in Commerce, the other Bachelor of Business majors, the Associate Diploma in Administration, and the proposed Graduate Diplomas in Administration and Accounting.

Applicants should have an extensive commercial EDP background with considerable experience in the development of computer-based business systems. This should include project management, systems analysis and experience of database applications.

QUALIFICATIONS
A degree in data processing or equivalent relevant experience is essential. A higher degree and lecturing experience are desirable.

CONDITIONS OF SERVICE:
A copy of the College's Conditions of Service, together with the relevant Information Statement on the position and the Department will be forwarded on receipt of applications.

APPLICATIONS:
Application, *in duplicate*, including full personal details, age, previous appointments, qualifications, present position, the names and telephone numbers of three referees, and the position, should be addressed to:

The Recruitment Officer
Darwin Community College
PO Box 40146
Casuarina NT 5792
Australia

Initial enquiries regarding the duties of the position may be directed to Dr L. H. Greenwood, Head of the School of Business and Administration, on (089) 201448.

Closing date: 17 December 1982 (1774)

ANALYST PROGRAMMER

We are a leading financial company currently experiencing rapid growth and we have a vacancy for an Analyst Programmer. The successful applicant will join our young enthusiastic Data Processing team and will have responsibility for enhancement and development to a large modern on-line financial system running a Honeywell DPS4.

Candidates must possess at least 2/3 years' Cobol programming, preferably machines in an on-line environment. Experience on other Machines and on Data Communications would be useful. Salary negotiable.

Please apply in writing to:
Mr R. Scott
Legal and Trade Collections Ltd.
Derby House, 12 Winkley Square, Preston, Lancs. (1786)

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£25K + QUALITY CAR

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A dramatic increase in recommendations to their clients has created the need to appoint an experienced salesman with a successful track record in large mini-based systems and a broad commercial knowledge to head up this new sector.

Potential directorship and equity participation.

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5 Systems Analysts — 8 years' VMEB experience financial/personnel systems — £20,000 plus

6 Team Leaders/10 Programmers — 5 years' Cobol plus VMEB experience — £18,000 plus

Database Specialist — IDMS support under VMEB. Salary negotiable

Programmer — excellent opportunity young qualified prog. Experience, qualified, experienced Apple basic debug and prog., £12,000-£15,000

All renewable annual contracts. Tax free

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(1760)

A London-based Consultancy involved in the design and implementation of advanced database, accountancy and other micro-systems in the commercial, industrial and medical fields is seeking

A Project Leader

with six years' experience of micro-systems and demonstrable leadership ability. Some OR knowledge will be an advantage but is not essential.

Junior Analyst/ Programmers

aged about 25 with two years' micro-systems experience.

We are interested in men/women who wish to work at the forefront of systems design and application. Salary and other benefits for such people will be very attractive.

Telephone 07372 46512 or write to Nimrod Executive, 6 The Mount Drive, Reigate, Surrey RH2 0EZ (1787)

NIMROD

Computer Systems Programming Officer
£27,000 tax free in Saudi Arabia for a 2-year assignment

Lockheed Aircraft International's activities in Saudi Arabia involve the provision of a wide range of electronics, telecommunications and aviation support services, with a major responsibility for the training of Royal Saudi Air Force personnel.

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Qualified to degree level in Maths or Computer Science (or Military recognition as a systems programmer), applicants must have at least five years practical experience as a systems programmer and a close familiarity with planning, designing, developing and commissioning radar and data handling software systems. Your knowledge should include Marconi MYRIAD user code, LOCUS data code one and another high level language.

In return we offer a salary of £27,000 for a 2 year assignment, together with an attractive range of benefits which include: free accommodation, food and laundry; three paid leave periods per year with return flights to the UK; medical and life insurance and excellent sports and recreational facilities.

For further details please contact the Senior Recruitment Executive (Lockheed), IAL, Personnel Consultancy, Aeradio House, Hayes Road, Southall, Middlesex, UB2 5NJ. Tel: 01-574 5000. Please quote ref. L199. (172)

Lockheed IAL

HEREFORD & WORCESTER COUNTY COUNCIL
Worcester Technical College
Department of Business Studies

Lecturer II Computer Science

Applications are invited for the above post which will involve teaching to a wide range of courses including GCE 'O' and 'A' Level, BEC/TEC and City and Guilds. The ability to offer the teaching of some mathematics would be an advantage.

Applicants must possess a degree or a professional equivalent qualification preferably with commercial, industrial and/or teaching experience.

The post is available from 1st January, 1983, or as soon as possible thereafter.

SALARY: Lecturer Grade II — £8,856-£11,022 (position on scale is dependent upon experience)

Further details and an application form can be obtained from: The Principal, Worcester Technical College, Deansway, upon receipt of a stamped-addressed envelope. (1617)

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Box number replies should be addressed to:

Box Number .....

c/o Computer Weekly
Quadrant House
The Quadrant
Sutton, Surrey SM2 5AS

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MERTON TECHNICAL COLLEGE

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LECTURER I

IN DATA PROCESSING, Department of Business Studies and Management, to be filled from 1st January, 1983, or as soon as possible thereafter. Salary: Burnham Scale, Lecturer I — £8,388 to £9,267 per annum plus London Allowance.

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Director of Education and Clerk to the Governors

Analyst Programmers for Scientific Applications

Middx. & Herts. ***to £11,000***

The Computer Science Department runs PRIME 400 and PRIME 750 computers, providing on-line facilities to a large number of users at our research sites in Greenford, Middx., and Ware, Herts.

We wish to recruit Analyst/Programmers to work on a variety of projects concerned with the discovery and development of new drugs.

Applicants should have a scientific or mathematical background, preferably with a qualification to degree level, and at least one year's experience of FORTRAN programming in a scientific environment.

Starting salaries relate to age and experience and will be up to £11,000 per annum including site allowance and profit sharing bonus. Other major benefits include a non-contributory pension scheme, relocation expenses if appropriate and flexible working hours.

Please write or telephone for an application form to: Mr. R. W. Jones, Personnel Officer, Glaxo Group Research Limited, Greenford Road, Greenford, Middlesex, UB6 0HE. Tel: 01-422 3434, ext. 2702, quoting ref. 462.

Glaxo *Group Research Ltd.* (1797)

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Our client is a large financial organisation and a subsidiary of one of the major banks. They are currently developing extensive on-line systems including a nationwide branch office network. An experienced Systems Analyst is required to work on on-line developments based on IBM and Tandem computers.

Candidates must therefore have experience of on-line systems development (gained preferably on the above mentioned hardware). Other essentials are considerable experience on the business side of systems analysis and the ability to communicate effectively with a wide range of user staff.

This key position will include requirements investigations, preparation of user orientated system specifications and assistance in systems implementation.

Conditions of employment and benefits are excellent including non-contributory pension, subsidised restaurant and BUPA membership. After a qualifying period there is an annual bonus and staff mortgage scheme.

To apply, or for further details, please contact JEFF RUBBERT in strictest confidence.

(1792)

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Hardware Systems Engineering Manager
from £15,000 + car

This is a senior role, encompassing all aspects of hardware selection and purchasing, together with the management and configuration of our in-house development facilities.

You should have a relevant degree plus proven experience in a similar role with a hardware supplier or software consultancy. Your background must have included configuration design, negotiations with suppliers, and man-management. Previous involvement in major turnkey systems is essential.

Hardware Systems Engineer-VAX/Communications
c.£15,000

Concentrating on VAX systems configuration and data/voice communications this role offers wide-ranging project involvement from sales support and customer liaison, through proposal writing, to contact with suppliers.

You must have a strong hardware background gained with a manufacturer in a systems support/implementation role. A knowledge of LAN's, and of protocols such as X25, HDLC, and SDLC is desirable.

Salaries will be negotiable, reflecting the experience and potential we require, and relocation assistance is part of the generous benefits package.

If you would like to know more about these positions, or about other opportunities with Software Sciences, please telephone Sarah Chambers on 0252 544321, or write to her at: Software Sciences Ltd., Abbey House, 282/292 Farnborough Road, Farnborough, Hampshire GU14 7NB. After office hours, telephone 0252 516955 (answering service).

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Setting new standards of computing excellence.
(1785)

NIGERIA
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EXTREMELY ATTRACTIVE TERMS

A major industrial concern with headquarters in Lagos, is seeking to fill the vacant position of Group DP Manager. The contract would be for an initial period of 3 years and terms and conditions are extremely attractive.

This company uses NCR 8250 and 8430 computers and is currently reorganising its operations. There is also expected to be a significant program of system development during the next year.

Previous overseas experience, NCR experience and Project Management experience would all be considered desirable although not mandatory. However, applicants should have at least 10 years of DP experience and some DP Operations background.

Please forward your résumé to:
Box 1233 COMPUTER WEEKLY

Interviews will probably take place in London around mid-December. (1787)

Freelancers . . .

. . . In the North of England and Scotland who are available now or in the near future are invited to contact me, Peter Moore, to discuss a variety of interesting and rewarding assignments throughout the UK and overseas.

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Application forms may be obtained from the Personnel Manager, The Associated Examining Board, Wellington House, Station Road, Aldershot, Hampshire, (Tel: Aldershot 25551), to whom they should be returned, marked 'Private and Confidential', not later than Friday, 3rd December, 1982.

(1720)

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This post offers the successful candidate the opportunity to widen his/her experience to all aspects of developing and implementing computer systems and of running a computer installation. Assistance with housing and relocation expenses may be available subject to local agreement conditions.

Write or telephone for an application form (telephone at any time) quoting reference 2165/1 to Personnel Department, Cumbria Constabulary, Police Headquarters, Carleton Hall, Penrith, Cumbria CA10 2AU. Tel: 0768 64411 (ext 2165). (1617)

Analyst/Programmers
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The Job

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The Company

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Telephone: 0734 785649

Protel

(1618)

SALES BIT

Quality of Management—32

Keep those meetings entertaining

IF sales meetings are to be worthwhile they must result in participants departing with greater enthusiasm to sell the company's products than before they went in. This means that such events should be staged (and I use that word deliberately) only when they are required, with preconceived objectives in mind and presented in an entertaining manner.

The classic sales formula for the structure of a sales call, AID (Attention, Interest, Desire), is applicable to the formulation of a sales meeting with desire interpreted as the will to go out and sell.

If a sales meeting cannot capture the attention and interest of its participants it is far more profitable for all concerned to be out in the field instead.

When should a sales meeting take place? There are two factors to take into account: justification and timing. First there has to be a reason.

The fact that a sales meeting has hitherto taken place on the last Friday of every month is no justification for another one this month. There has to be a positive reason – new product announcement, competitive situation, special presentation, sales training session, and so on.

Notice that this brief list does not include administrative matters. Most topics of this kind are best dealt with separately; certainly those affecting individuals or small groups as opposed to the sales force at large.

Even administrative matters affecting everyone should never be the basis for a sales meeting but rather a brief side issue accompanying a significant sales or marketing event.

Timing is rather more difficult and to some degree depends on the size and distribution of the sales force. What makes it more difficult is the fact that there are always good reasons for not having a sales meeting at any time you care to think of. If the chosen time isn't eating into prime selling time it's cutting into personal time.

I prefer Friday afternoons because of all selling time it is the part of the week that a significant proportion of salespeople are psychologically conditioned against in terms of meaningful selling activity. For many the weekend starts on Friday lunchtime with plenty of flak and camouflage to prove otherwise!

Saturday mornings have a lot to recommend them, away from the pressure of people and telephones and worrying about what else one could be doing if one was not tied up in a sales meeting.

However, the venue and fringe benefits have to make it worthwhile in the salesman's eyes. The sales office and a Wimpy isn't a fair exchange for keeping people away from their own free time. Something like a country club with a first-class lunch followed by the opportunity of sporting activity and a free bar at least tells everyone the company appreciates that it is taking up precious time that the individual would normally have to himself; even if only in bed!

Finally, there is the content of the sales meeting. Leaving the event to fate in the form of a predominance of subjects introduced by the participants themselves under the heading of "Any other business" is truly courting disaster. How can a sales manager expect to control a meeting when he has made no preparation for the greater part of the topics involved?

If a sales meeting is to succeed it must be subject to considerable thought and thorough pre-preparation. It must have variety of pace, real interest for all concerned and, if at all possible, elements of surprise so that those in the back row cannot, and do not wish to, fall asleep, become engrossed in The Times crossword or page three of their favourite tabloid.

Maybe this sounds difficult – after all the meeting is being staged by a sales manager not an impressario: but many things can be done to put some sparkle into the event. It is a well established fact that one of the strongest forms of education is via the means of entertainment, so entertaining it has to be.

Next week I hope to give you some ideas that will not get you into show business but should raise the interest value of your future sales meetings.

Alan Williams

PUZZLE ANSWER

LET X be the number of persons and Y the number of houses. Now, the method of calculation obviously involves an arithmetic progression.

The sum of such a progression equals the average of the first and last terms (£2 and £2Y in this case) multiplied by the number of terms (Y).

Therefore we can set up the equation $\frac{1}{2}Y(2 + 2Y) + X - 100 = 24Y$, from which we find that $X = 23Y - Y^2 + 100$.

Analysing this result it is clear that X must be divisible by Y since each family has the same number of people in it. Furthermore, X (and hence the expression $23Y - Y^2 + 100$) is positive.

But for all the values Y = 5 or less, and Y = 18 or more, the expression $23Y - Y^2 + 100$ is negative. Therefore Y must be a whole number between 6 and 17.

Trial and error then shows that only when Y = 10 is the corresponding value (30) of X exactly divisible by Y. The cul-de-sac therefore contains ten houses, with three people in each house.